The Mining Journal
Established 1835
Railway & Commercial Gazette
Vol. CCXLVI No. 6302 LONDON, JUNE 1, 1956 PRICE 9d.

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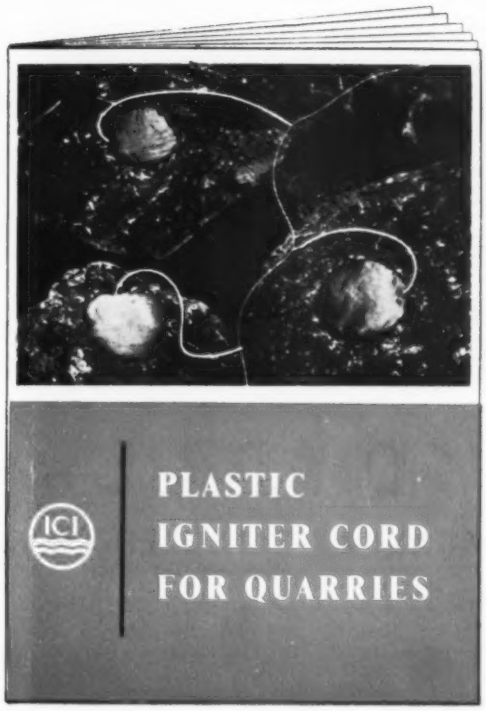

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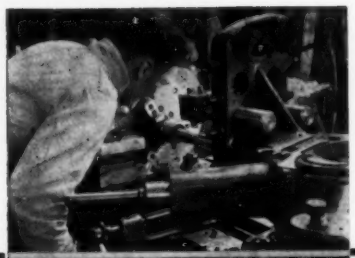

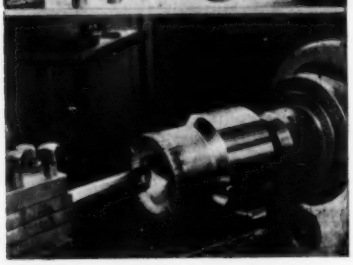

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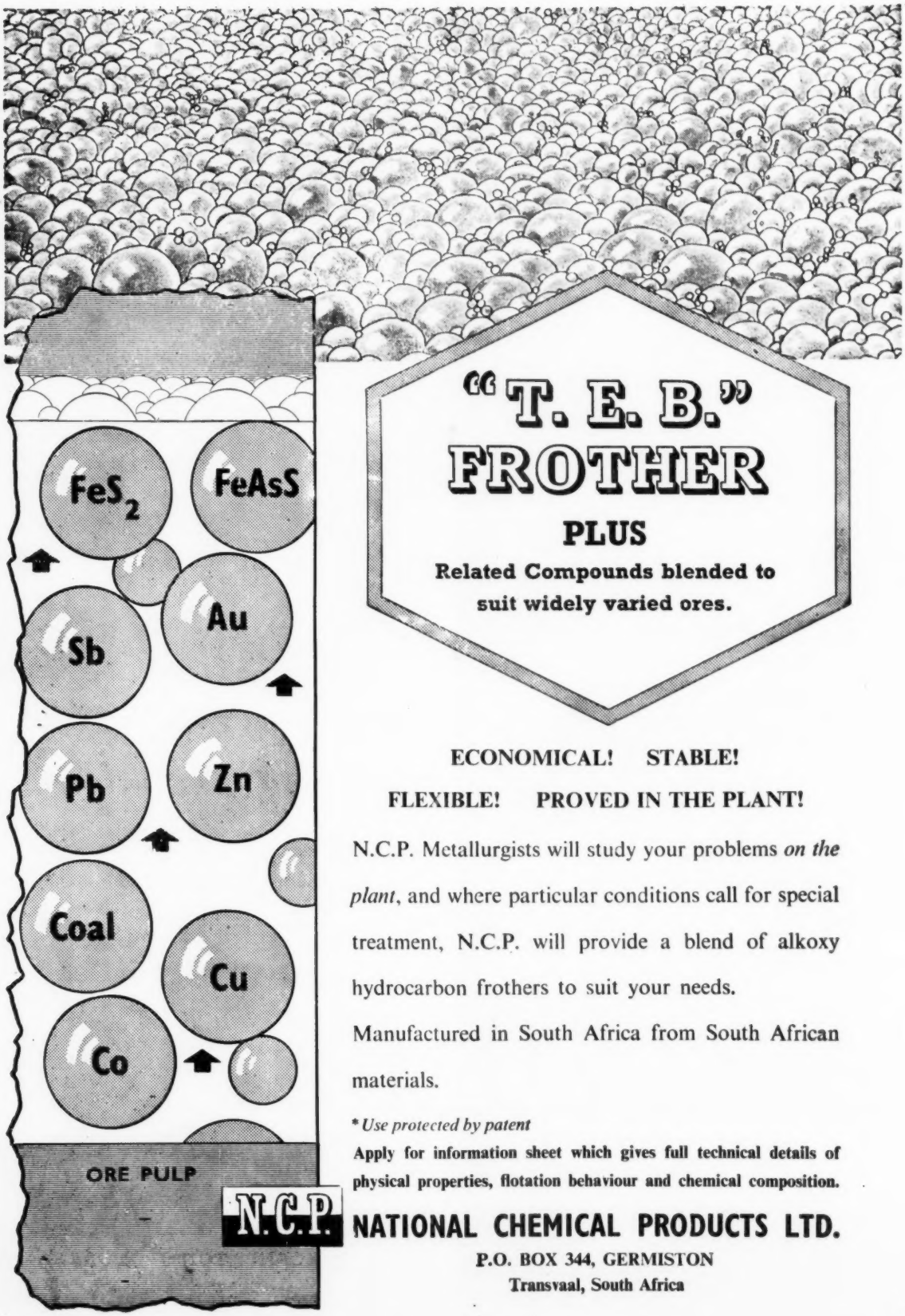

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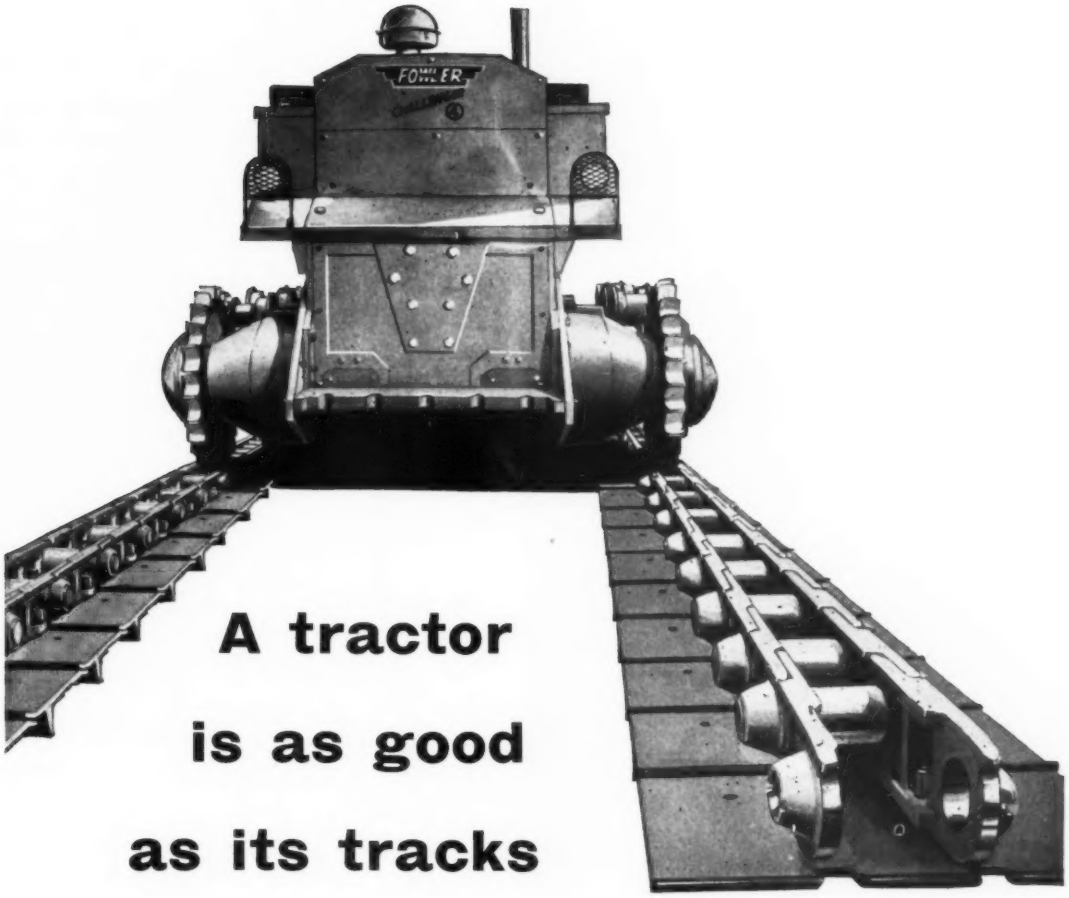

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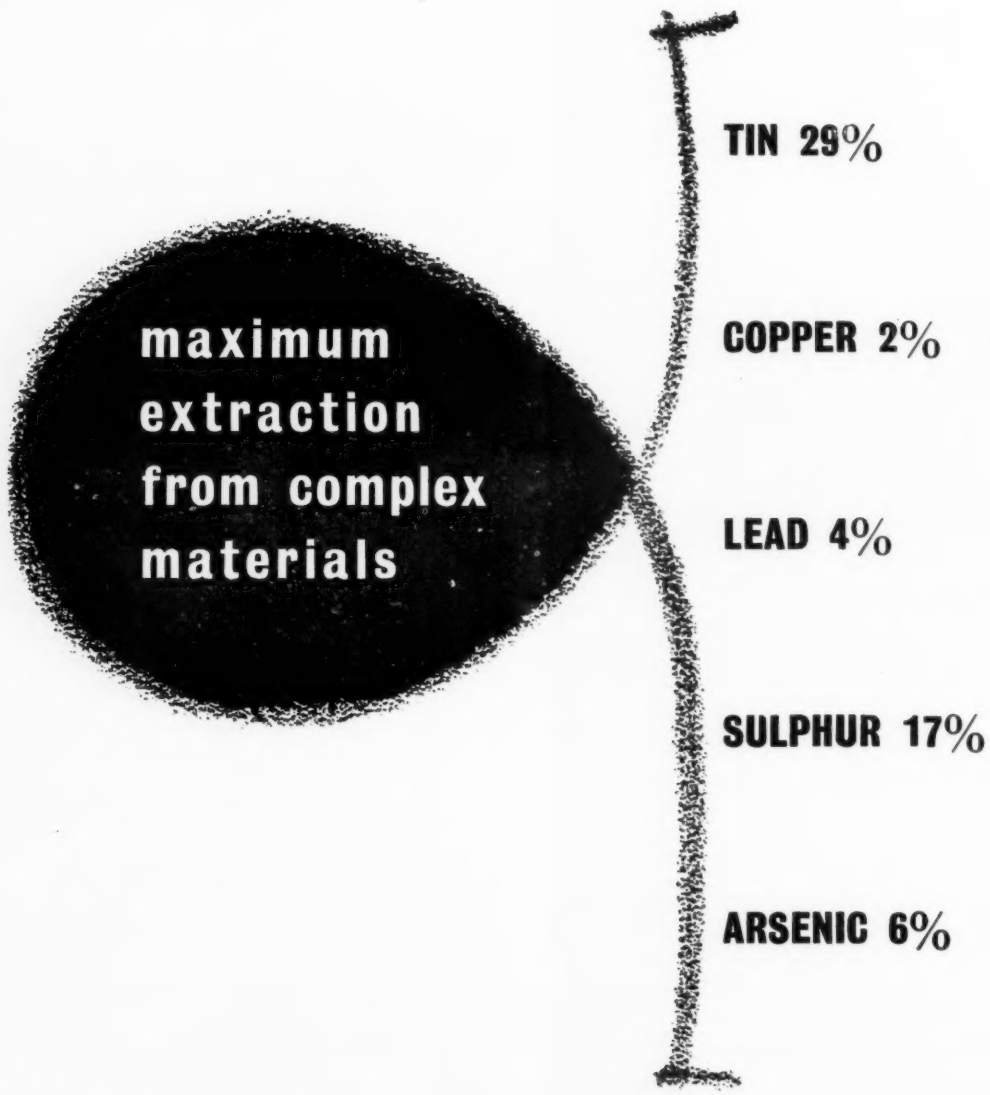

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NOTES AND COMMENTS

Uranium's Cloudy Future

The prevailing uncertainty regarding uranium's future has been increased by the news that the U.S. Government will continue to buy domestic uranium for almost five years after the present deadline. In announcing a new programme to take effect after March 31, 1962, when the present buying plan expires, A.E.C. stated that a set price of $8 a lb. would be paid. This price is believed to be slightly lower than the average prices at present negotiated with producers. The new programme applies only to domestically produced uranium concentrates and the commission will be able to exercise an option to limit its purchases to 500 tons of uranium oxide a year from any one mining operation. A.E.C. envisages a gradual transition from a Government controlled uranium market to a commercial market as industrial demand for uranium develops. Producers will, accordingly, be permitted to sell uranium to licensed domestic commercial users as well as to the commission.

The A.E.C. made no mention of its foreign ore buying contracts with official contracts with uranium producers, but a spokesman said these would expire on March 31, 1962, when the present U.S. programme dies. If the U.S. then requires more ore from Canada, new contracts would be negotiated. Presumably the same policy is to be adopted towards producers in South Africa, Australia and elsewhere.

The Dominion's Trade Minister, Mr. Howe, stated recently that Canada did not intend at this time to extend Canada's uranium buying programme beyond the current 1962 deadline. He also said that Canadian resources would be greatly in excess of domestic requirements for many years to come and export markets would, therefore, be required. In this connection it is noteworthy that the U.K. Atomic Energy Authority has entered into negotiations with Eldorado Mining and Refining for the delivery of a substantial quantity of uranium before March 31, 1962.

The apparent unwillingness of the U.S. Government to enter into more extended commitments with producers in other countries gives enhanced interest to the distinctly cautious views expressed by the new chairman, Mr. G. E. Coke, at the annual meeting of Rio Tinto. Mr. Coke believes that the demand for uranium for purely warlike purposes, which might be assessed at between 10,000 and 15,000 tons a year, will have been satisfied before long, and in any case by the end of the contract period, though there will still be a continuing demand both for stockpiling existing atomic weapons and devices and for developing new ones. Thereafter, demand will depend on the rate at which the use of electricity expands. In the light of available data it is reasonable to expect a rise in the construction of new nuclear power stations to a capacity of about 10,000 megawatts annually by 1975. The amount of uranium required for the initial outfit of a new generating station might then have fallen to about one ton per megawatt, on which basis the demand for uranium metal for generating purposes would reach some 10,000 tons annually by 1975. Mr. Coke's statement appears on page 682.

On the other hand, reduction in the initial outfit of uranium for a nuclear station by improved methods, or economics resulting from the use of certain other metals in conjunction with uranium could make substantial differences in the quantities required. Moreover, there is no doubt that by the end of the 20-year period breeder-reactors on the Dounreay pattern will be in operation, requiring no replacement fuel. It is also conceivable that the fusion of light elements, despite the formidable difficulties it presents, will have been explored sufficiently to provide a source of power.

For all these reasons any company venturing into the exploitation of uranium must assure itself as a first responsibility that the way is clear to benefit its shareholders. Rio Tinto has only ventured into uranium propositions where a contract has already been concluded—as in the case of Algom in Canada and Mary Kathleen in Australia, or where there is a reasonable prospect of its shortly being concluded, as in the case of some of the mines now controlled by the Rio Tinto Mining Company of Canada.

Diversification of Mining and Metal Interests

The address of the president, Mr. Robert P. Koenig, at the annual meeting of Cerro de Paso shareholders is of even more than usual interest, not only because it adds considerably to the progress of mining development in Peru, but also because of the insight it gives into the growing tendency of the larger mining corporations to broaden their activities by identifying themselves with the processing and marketing of their products. As Mr. Koenig pointed out, the metal trade is particularly subject to wide fluctuations in market prices. By multiplying its sources of earnings, a mining company can increase its revenue and at the same time lessen the impact from a price decline in any one line.

Cerro de Pasco is continually searching for new sources and varieties of metals. The corporation is unique in that it produces some 28 different items from its Peruvian operations alone. Ore deposits have little respect for geographical boundaries and new sources are sought wherever metallic content is believed to be sufficient to make mining rewarding. Thus far the search in Peru has resulted in three investments, one of the companies in question having copper ore reserves which are among the largest in the world. Exploratory work is also being carried on with varying degrees of intensity in other American countries. Late last year, for example, a two-year option was obtained to acquire all the common stock of a company which owns a copper orebody in the Andes range east of Santiago, in Chile. In the U.S. and Canada approximately 50 different base metal mining properties were investigated during 1955 and several core drilling projects and geophysical surveys were carried out.

The corporation is also seeking to find new methods for increasing production of such rare metals as selenium, tellurium and indium, which are in growing demand and which are now being produced in limited quantity.

Recognizing that cyclical fluctuations in revenue from metal sales can be offset to some extent by more stable income from the production and sale of other products, the corporation has a carefully planned programme of expansion within the extractive and related fabricating industries. As part of this programme it has embarked into oil and gas development on a modest scale and now owns interests in producing wells in Texas, Louisiana and Illinois.

In broadening the list of production items, it is often possible to include articles which a company requires for its own activities and which it can produce itself more cheaply than it could purchase them from other undertakings. Excess production can be sold to the public, thus adding to overall revenue. An example of this type of diversification is the production of refactory bricks, which are used in the corporation's own furnaces at Aroya and which also find a ready market in other Peruvian industries.

Another way of diversifying is by extending activities into a field which is complementary to the principal business. Although his profit margin often suffers in the face of declining metal prices, the manufacturer is not troubled to the same extent by wide cyclical variations in profits. Prime producers can thus limit the impact of changes in metal prices by advancing the raw material several steps towards a finished article. In accordance with this policy Cerro de Pasco has a wholly-owned subsidiary which manufactures over 100 different types of wire and cable.

Similar policies of diversification have, of course, been adopted to a varying degree by other leading mining corporations in North America, Africa and elsewhere. Examples which come immediately to mind are the South African mining finance houses, which are closely identified with industrial expansion in the Union and have also extended their interests across the Zambesi into the Rhodesias and, in some instances, to other continents.

In thus broadening their activities the larger mining organizations are not only safeguarding themselves substantially against fluctuations in metal prices, but are making a contribution to economic and technical progress which goes far beyond their primary function as suppliers of raw materials for industry.

Anglo American's Contribution to Southern Africa's Expanding Economy

Cecil Rhodes based his financial policy on the conviction that the very successful diamond mining company he founded should consciously be treated as a foundation for the development of a modern economy in Southern Africa. At the same time he realized very clearly that no mining company or group is in a position to carry out policies unless they are going to make profits for its shareholders.

In carrying out the ideals of its founder the De Beers Company embarked upon many activities not directly associated with diamond mining, such as the colonization of Rhodesia, ranching and agriculture, and the manufacture of explosives and fertilizers.

It was in the same spirit of practical idealism that the Anglo American Corporation was formed in 1917 by Sir Ernest Oppenheimer, the present chairman, whose own business outlook was formulated at Kimberley, in the shadow of the Rhodes tradition. The benefits flowing from Rhode's conception of profits as an instrument for economic development are strikingly apparent from the Corporation's Annual Report for 1955. In the quality of its presentation this fine publication reaches an even higher standard than that of last year's notable report. In content, it fittingly records another year of widening achievement and, incidentally, of higher profits.

Fully in keeping with the Rhodes tradition was the policy of utilizing money made on the gold mines of the East and Central Rand to develop the Far West Rand and, on an even larger scale, the "new Rand" which has arisen beyond the Vaal. In the development of the Orange Free State goldfield the mines themselves have so far involved a total capital investment of the order of £167,000,000, some £95,000,000 being for the mines of the Anglo American Group.

This far-sighted policy is now bringing spectacular rewards. In a little under ten years, 11 of the 12 mines projected in the original Orange Free State development programme have been brought to production. Of the 11 producing mines, six are administered by Anglo American. During this development programme, 27 shafts have been sunk to an aggregate depth of over 22 miles and over 430 miles of underground tunnelling and development have taken place. Approximately £18,000,000 has been spent on housing for Europeans alone. The total population occupying the townships thus created and the accommodation provided on the mines is now over 130,000, of whom 8,000 Europeans and 50,000 Africans are in the direct employment of the mines. Work is being undertaken on a number of mines to enable them to expand their production considerably and it can be expected that over the next few years the monthly milling rate of the existing Orange Free State mines will rise to more than twice the rate attained at the end of 1955.

The Free State having been brought to production, the rapidly increasing profits from this source will enable the corporation, in due course, to finance new or expanded programmes of economic development elsewhere. For a number of years Anglo American has been increasingly looking north. Through its mining activities on the Copper-

belt and elsewhere the group has long been closely identified with the economic development of the Rhodesias. Indicative of the growing importance attached to its Central African interests has been the decision that services required by Anglo American Group companies in the Federation should be provided as far as possible from the office at Salisbury, to which the consulting engineers to the Rhodesian mining companies and certain technical, geological and clerical staff were transferred in January, 1956.

In common with the Rhodesian Selection Trust group, Anglo American is seeking to build up a stable and expanding mining industry on which the industrialization of Central Africa can be securely based, and which constitutes an essential prerequisite for fulfilment of the "partnership ideal". By their constructive attitude towards the problem of African advancement, as evidenced by the agreement concluded last autumn with the European Mine Workers' Union in September, 1955, both groups are making a direct contribution towards the successful working out of this concept of partnership, so vital to the success of Federation. Moreover, by identifying themselves with the progress of industrialization in Central Africa, they are clearly resolved to avoid the situation which arose in the Union of South Africa where, for many years, economic progress was hampered by the tendency to regard mining and secondary industry as conflicting rather than complementary.

Indications of the far-sighted manner in which Anglo American is realizing this intention may be seen in such developments as the establishment last June of the Anglo American Rhodesian Development Corporation to act as a channel through which Anglo American and its associated companies could help promote the economic development of the Central African territories. One of the first acts resulting from this arrangement was to conclude an agreement with the Rhodesian railways, whereby it undertook to purchase trucks to the value of £5,000,000 and to hire them to the railways for 25 years. More recently Anglo's two copper producing mines on the Copperbelt, together with those of the R.S.T. Group, concluded arrangements whereby the four mines will, in effect, provide some 40 per cent of the finance for the first stage of the Kariba project.

Thus one way and another it is clear that Central African Federation is destined to be a major outlet for the profitable reinvestment of Anglo American's earnings which must be expected to grow, with the coming to maturity of the Free State mines. Moreover, it should not be forgotten that it is characteristic of the operation of the Group system that in the earlier years of a mine's life the Group tends to carry a large number of shares which are subsequently decreased as the mine becomes established. In this way a cyclical pattern emerges whereby Group capital is again freed up for the initiation of new ventures, as existing ones become firmly established.

From one standpoint we should perhaps be mistaken in placing undue emphasis on the extent to which Anglo American is now identifying itself with new enterprises in the Federation rather than in further reinvestment in the Union. On one occasion when, at the beginning of this year, Mr. Harry Oppenheimer was discussing the hiving-off of Rhodesian activities into a separate operational unit, he made it clear that the move towards decentralization which the corporation had taken, should not be taken to imply the expectation of a great separation either economically or politically between the Union and the new Federation. "I think," he added, "that the economic interest and the political interest of the two countries will bring them very close together, and I believe that the very rapid development of the new Federation, as a separate economic unit and a completely separate political unit, will in the long run be found to be a necessary step to bringing about closer union between the two countries."

Brazil

(From Our Own Correspondent)

Terresopolis, May 18.

In view of the growing demand for tin and increasing import difficulties, the Department of Mineral Production (DNPM) is assisting mining companies to expand output. In 1955, 66 exploration pits were drilled at Volta Grande, 12 at Ribeirao Cachoerinha and 119 in other sections of Rio Das Mortes; 36 cassiterite deposits are being worked, the most important being at Volta Grande, in Minas Gerais. Production amounted to 460 tons last year and was almost entirely absorbed by Companhia Estanifera do Brasil, at Volta Redonda. This company receives part of its supplies from the recently-discovered occurrence in the Amapa Territory.

The deposits of lead, zinc and copper minerals in Minas Gerais, reported in 1955 in the Poco Verde range and at Barracao, municipality of Vazante; at Itacurambi and Cantinha, municipality of Januaria; also those in Ribeira do Iguape, Sao Paulo, have been surveyed from the air and are being exhaustively examined. Preliminary investigations indicate that all are commercially important.

DNPM is investigating the coastal monazite deposits from Bahia to Rio, particularly on the Espirito Santo beaches, where 803 pits were drilled and 10,595 samples collected in 1955 for analysis.

At Pocos de Caldas DNPM has located valuable occurrences of baddeleyite, thorium and uranium. Exports of baddeleyite, formerly unrestricted, are now severely controlled. The deposits of uranium, thorium and zirconium of Taquari and Moro do Ferro contain abundant reserves of radioactive minerals and Pocos de Caldas produces five times more zirconium than the monazite sands of Espirito Santo.

Professer Djalma Guimaraes, late of the National Research Council, told the Parliamentary Atomic Energy Commission in April that atomic minerals have been proved at Barreiros, Araxa and in southern Bahia. An approximate calculation of the volume of Araxa minerals, excavating to a depth of 45 m., showed 130,113 tons of thorium, corresponding to over 2,000,000 tons of monazite, 84,800 tons of uranium oxide and large quantities of niobium. Mixed Brazil-U.S.A. teams left Rio in May to prospect for atomic minerals in Sao Paulo and investigate reports of uranium occurrences in South Brazil.

The entire production of uranium is acquired and stocked by the National Research Council, but thorium is exported at the discretion of the Strategic Minerals Export Commission.

MINING ACTIVITIES AND MINERAL EXPORTS

Private, as well as official, interest in mining activities is well maintained. In 1953, 1954 and 1955, respectively, DNPM received 483,418 and 442 applications to prospect for minerals and granted 349,379 and 402 permits. The remainder were refused owing to the applicants' failure to comply with the regulations. During the same years 80, 81 and 71 licences were issued to exploit deposits, proved by prior prospecting to be of interest industrially.

Compared with 1954, Brazil's mineral exports increased in value to U.S.A. last year as follows: iron ore 60 per cent, to $11,225,000; amianthus 21 per cent to $2,734,000; manganese 88 per cent, to $4,665,000; concentrates of tungsten 3.3 per cent, to $3,227,000; diamonds 24 per cent, to $201,000; industrial diamonds 168 per cent, to $554,000. Exports of beryllium ore dropped 62 per cent in value, to $597,000; rock crystals 14 per cent, to $1,153,000.

The Concentrating Plant at Chibuluma Mines, Northern Rhodesia

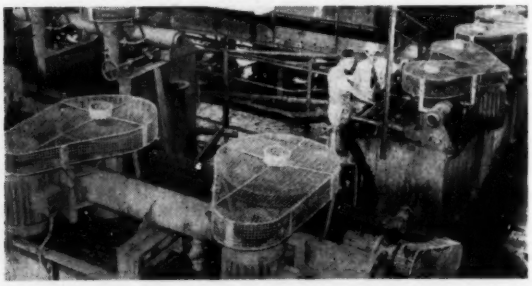
It already has been reported in *The Mining Journal* that Chibuluma, the newest mine of the Rhodesian Selection Trust group, was brought into production on May 5, 1956, when Lord Llewellin, the Governor-General, officially opened the concentrating plant. The following article describes the concentrating plant and the sequence of the processes employed therein.

Construction of the Chibuluma concentrator started in July, 1954, and design based on small-scale test work and current metallurgical practices preceded the construction. Test work was continued during construction to evolve a satisfactory method for the separation of the copper and cobalt minerals contained in the Chibuluma ore.

This separation method consists of crushing, then grinding, the ore until 60 per cent of the ore is less than 200 mesh, and then separating and concentrating the copper and cobalt minerals, which have been released from the waste material and each other. To do this a concentrator designed to treat 40,000 tons of ore each month has been built. This concentrator has five main sections performing the following operations ; namely coarse crushing, fine crushing, grinding. flotation and filtering.

COARSE AND FINE CRUSHING

The ore from underground arrives on surface broken to an average size of less than 18 in. by 18 in. It is carried by belt conveyor from the shaft bins to a 1,500 tons capacity ore storage pile situated over the coarse crushing chamber. Here a pan feeder regulates the flow of ore to a jaw crusher which is capable of crushing 175 tons per hr. and reduces the ore to less than 5 in. in size.



The flotation bay in the concentrating plant

The product from the jaw crusher is carried by belt conveyor to the fine crushing plant, containing two gyratory crushers which crush the ore to less than ¾ in. in size.

The grinding section reduces the size of the ore further to approximately 60 per cent - 200 mesh, at which size the various mineral particles are separate and amenable to flotation. The grinding section contains two ball mills each 10 ft. in diameter.

FLOTATION PRACTICE

The pulp flows into conditioning tanks where it is agitated and mixed with several reagents. These reagents form a froth when the pulp is in the flotation machines and also make it possible to separate the copper and cobalt minerals.

After these reagents have been added to the pulp in the conditioners, this pulp passes to the first bank of flotation cells where the copper mineral concentrate is removed in a froth. The remaining pulp containing the cobalt mineral and a small amount of copper mineral and all the waste material flows into another conditioning tank where more reagents, necessary for the flotation of the cobalt minerals and also

View from Norrie Shaft headframe. In foreground is the 1,500 tons capacity ore pile and the concentrator, with filter plant and concentrate storage pens in right background

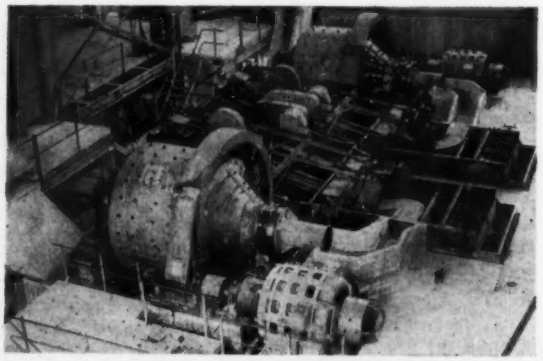
for the flotation of the remaining copper, are added.

The cobalt minerals, previously chemically prevented from rising in the flotation machines are amenable to froth flotation and are now pumped in the froth produced in another bank of flotation cells. The tailing from these cells contains all the waste material found in the ore and this is pumped to the tailings dam. This tailing constitutes about 80 per cent of the ore treated.

THE FILTERING PROCESS

The pulp from the thickener tanks is pumped to the filter plant where most of the remaining water is removed from the concentrates to produce a cake suitable for shipment.

These two concentrates, one of the copper mineral, the other of the cobalt mineral, are the end products of the process at Chibuluma. From here they will be loaded into lorries for despatch to the rail head at Kitwe. From Kitwe the copper concentrate will be sent to Mufulira Copper Mines Ltd. for smelting. The cobalt concentrate will be treated at a plant which is being built by Chibuluma Mines Ltd. at Ndola.



Ball mill bay in the concentrating plant, showing the two 10 ft. by 72 in. ball mills and the rake classifiers in closed circuit

Canada as a Market for Metal Mining Machinery

A mining mission, sent by the Canadian Metal Mining Association, visited Britain in September-October, 1955. Its purpose was to "establish a liaison between the Canadian mining industry and Britain's mining machinery manufacturing industry in an attempt to increase British trade in Canada". This article is based on the report of the Mission, supplemented by additional information made available by the Export Services Branch of the Board of Trade.

The Canadian Metal Mining Mission consisted of Mr. V. C. Wansbrough, vice-president and managing director, Canadian Metal Mining Association; Mr. T. E. Little, Manager, Waite Amulet Mines, Ltd.; and Mr. Marc Boyer, Deputy Minister, Department of Mines and Technical Surveys, Ottawa.

During its stay of 32 days in England and Scotland the Mission visited 31 manufacturing establishments. It also met the principals or representatives of 72 other firms. British manufacturers were informed of the size, diversity and growth potential of the Canadian mining industry and of its requirements in machinery and equipment, more than $30,000,000 worth of which was imported in 1953. Less than 5 per cent of this total was made in Great Britain. When possible the Mission advised manufacturers of the chance of their products being accepted in Canada.

EXPANSION OF MINING IN CANADA

In a circular reviewing the Mission's report, the Board of Trade point out that Canada is the world's largest producer of calcium metal, nickel and platinum; the second largest producer of aluminium, cadmium, gold (excluding the U.S.S.R.), magnesium, selenium and zinc; an important producer of barite, molybdenum, silver, titanium, copper, lead and iron; and is about to become one of the world's largest producers of uranium.

In every post-war year the value of mineral output has increased, rising progressively from $500,000,000 in 1946 to an estimated $1,778,000,000 in 1955. Of last year's total production metallic minerals accounted for $1,002,000,000, non-metallics $149,000,000, mineral fuels $410,000,000 and structural materials $217,000,000.

As an indication of the present size of the mining industry, it is stated that about 700 metal mines are operating and 125 milling plants, 45 of them with a capacity of 1,000 tons or more per day. Yet the potential size of the industry is infinitely greater. The progress of exploration is continuous and every month brings news of further discoveries and plans for development. In fact, there are reasons for believing that Canada's mining industry may still be in its comparative infancy. Of the Dominion's total area of about 3,840,000 sq. miles, one million sq. miles is regarded as potentially favourable prospecting ground. Of this, only about 20 per cent has so far been closely prospected.

OPPORTUNITIES FOR BRITISH EXPORTERS

Comprehensive statistics of Canadian production of mining machinery and equipment are not available, while the import statistics include many items (e.g., diesel engines, air compressors, cranes) which are purchased by other industries besides mining. Precise figures cannot therefore be given for the total annual purchases of machinery and equipment by the mining industry. The Board of Trade states, however, that the total purchases are estimated to be running now at approximately $100,000,000 per annum. Canadian production is far from meeting the total requirements and is unlikely to expand so rapidly as demand. The prospects for a continuing high rate of importation are therefore regarded as favourable.

The Mission emphasizes, however, that the Canadian mining industry is in a position to purchase its supplies anywhere in the world, due to its strong currency position. The U.S. supplies nearly 90 per cent of Canadian imports of mining machinery. Germany, Sweden, Switzerland and Japan are competing vigorously and, in some lines, very effectively. The sales efforts of British manufacturers must therefore overcome not only foreign competition but the mining industry's established buying habits.

In this connection the Board of Trade points out that, up to now, U.K. firms have taken little part in the supply of mill plant. It is in this field that the mining industry's accustomed buying habits are probably most firmly settled. Buyers naturally tend to specify equipment which has served them well in the past and whose performance is well known.

On the other hand, U.K. firms have already met with some success in selling a wide range of equipment to Canada, such as rock drills, compressors, valves, motors, machine tools, wire rope, conveyor belting and diesel engines. In fact, a few U.K. products have become extremely well known in Canadian mining circles and obtain rewarding business.

QUALITY AND PRICE

The Mission was generally impressed with the size and diversity of the British manufacturing industry, with the quality of its products, and with the excellence of its management, engineering staff and skilled labour. The quality of British products certainly matches that of Canadian or American goods. In fact, the British manufacturer attaches such importance to good engineering design that he could at times even be accused of "over-designing". This would prove an asset in the case of plant and equipment designed to meet rigid specifications, but would hold up production and delivery in the case of equipment or machinery which could be obtained with little delay from stock in Canada or the U.S.

Because of low labour costs, British manufacturers have a decided price advantage when competing with Canadian or American production. This would range from 10 to 30 per cent, according to the type of equipment involved, and is the main selling point for British manufacturers selling in Canada. Canadian mine management is very cost-conscious due to the high wage level. Unfortunately the Mission's report gives no indication as to how British equipment compares in cost with that of German, Swedish or Japanese manufacture.

DELIVERY

Many British firms attempting to trade in Canada in the last decade lost out on account of their slow deliveries. The Mission reports that these conditions seem to have greatly improved; British deliveries now approach more closely to Canadian and American standards. However, many of the firms visited were handling large orders from the National Coal Board. This seemed to account for a large share of their business, thus reducing proportionately their capacity to tackle export trade on a satisfactory delivery basis.

Early delivery is especially important in the case of new mines coming into production. New mines enjoy exemption

from Federal Corporation tax during the first three years of production and cannot afford delay in getting into production.

Mining companies often embark on preliminary discussions with suppliers before the final decision to develop a mine has been made. Such discussions will normally take place at the headquarters of the company, which is usually at Toronto or Montreal. It is therefore vital to have a competent representative in close touch with the principals of the company, with its engineering staff or its appointed consulting engineers, and with the future mine manager.

By far the most important part of selling to an existing mine lies in convincing the mine manager. While the purchasing agent at company headquarters will usually place the order, it is normally the mine manager who signs the indent. It follows that representation in Toronto or Montreal alone is inadequate. Frequent visits must be made to the mines themselves.

SALES AND SERVICE

The problem is not only to make equipment suitable for the Canadian market, which British manufacturers are doing or can do, but to sell it in competition with foreign firms already established. British salesmen will have to develop aggressive selling methods.

Before deciding to venture into the Canadian market, each industry must survey the market potential for its products. The establishment in Canada will depend on the type of product to be sold. British manufacturers have been advised to establish themselves in Canada by individual or co-operative sales offices and depots. Since British industry has been selling less than 5 per cent of Canadian imports of mining machinery, few adequate sales agencies are available which have contact with the industry. Long distance selling from Great Britain will lead to disappointment and frustration.

The mission believes that selling should not be the sole responsibility of the sales organisation. Senior men in the industry can do a great deal of good by personal contact with the customers. Some of the principals of the firms should themselves travel to Canada to survey the situation, visit the mines, and become acquainted with Canadian standards, requirements and buying habits.

Some British firms are already well established and are doing a fair amount of business in Canada. The principals of other firms have visited some Canadian mines, and many others have declared their intention of travelling over to survey the situation.

It is noteworthy that those British firms with a profitable trade in Canada are following up their sales by reliable and adequate service.

It is difficult and expensive for small companies to put forth the necessary sales effort. The Mission formed the opinion that a co-operative effort by a group of companies producing complementary products could be successful.

It is noteworthy that, in general, the recommendations of the Mission in this and other connections are in very close agreement with the conclusions reached by *The Mining Journal* as a result of its recent attempt to determine the fundamental requirements of a successful export drive (*The Mining Journal*, 16/3/56, pp. 321, 324 and 325, and 23/3/56, pp. 360 and 361).

TRADE PROMOTION

To assist U.K. manufacturers and the Canadian mining industry, the Mission recommends that the Canadian Metal Mining Association should establish and maintain a close relationship with the British Trade Centre operating in Toronto. By agreement, the British firms will send their literature to the Canadian Metal Mining Association. The Mission recommends that this literature be indexed and kept on display at the Association's headquarters for ready reference. A list of all British manufacturers of mining machinery, complete with the addresses of the firms, the products manufactured, and the names and addresses of the Canadian representatives, if any, is being prepared by the Dollar Exports Council for the Association.

PERSONAL VISITS

The Trade Commissioners in Canada are ready to introduce visiting businessmen from the U.K. to the most useful mining contacts, arrange visits to mines, and assist in every possible way. They may be contacted either direct or by writing to the Director, Board of Trade, Export Services Branch, Lacon House, Theobalds Road, London W.C.1.

THE FOLLOW-UP

The dispatch of the Metal Mining Mission to Britain is in itself concrete evidence of Canada's desire to encourage U.K. manufacturers to enter her mining market. For some years past the U.K. trade balance with Canada has been in deficit. From the Mission's report it is clear that U.K. manufacturers of mining machinery and equipment are potentially capable of making a much greater contribution towards closing the dollar gap, at the same time reducing Canada's dependence on the U.S., which at present is supplying the Dominion with mining equipment to a total value of nearly £7,000,000 a year.

The next move is up to the British manufacturers themselves. The basic problems have been underlined both in the Mission's report and in our own previous articles. It remains for the industry, in co-operation with the appropriate Government bodies, to determine the most favourable method of approach and the scope which exists for collective action.

In conclusion, it is noteworthy that the Mission's report underlines the need for additional incentive to encourage the export of mining machinery to Canada — a comment which, it is to be hoped, will not have escaped the attention of the British Treasury.

New Zealand's Magnetite and Ilmenite Deposits

Following preliminary investigations which revealed that there are some 700,000,000 tons of recoverable iron in New Zealand's iron sands, with possibly double this amount existing, applications for warrants to explore the west coast beaches of the South Island for deposits of magnetite and ilmenite ores of iron and titanium have recently been filed at the Warden's Court, Westport, by a scientist, a company manager and company directors.

At present, New Zealand imports £7,500,000 worth of iron and steel, but there are some indications that the Dominion might be approaching the time when she herself could economically make the steel which is so urgently required and so difficult to obtain. The recovery of iron and titanium from ilmenite black sand has been suggested as a basis for such an industry, and the present development is for the purpose of investigating just how much ilmenite could be removed by practical mining methods on a scale which would allow economic working.

Commercial attempts to extract iron from the iron sands have been made in the past, but without great success. Modern methods, however, have made the successful extraction a likely proposition.

Electrification of a Welsh Gritstone Quarry

An extensive modernization and expansion programme in the Alltgoch Quarries of the Anglo American Asphalt Company Ltd., near Llanybyther in Carmarthenshire, has been undertaken to increase production of all sizes of dry and coated stone. In conjunction with this programme it was decided to electrify the quarry, which had hitherto been driven by diesel engines, and a comprehensive contract was awarded to The English Electric Company for the supply and installation of all electrical equipment. Cabling and installation was carried out by the Towy Electrical Company of Dryslwyn, near Llandilo, as sub-contractors to The English Electric Company, and the plant which is described in the following article, has now been in successful operation with electrical drives for over a year.

When planning the new drives, it was decided to install separate electric motors to drive each individual item of plant, either through reduction gearboxes or V-belts. Apart from the modernization and expansion programme undertaken, it can be claimed that electrification has greatly increased production owing to the increased availability of plant; together with a decrease in maintenance expenditure, has enabled production costs to be reduced considerably.

Stone from the adjacent quarry is taken by dumpers to a chute and plate feeder before entering the primary crusher—a Baxter 36 in. x 24 in. machine, which is driven through V-belts by a 75 h.p. English Electric induction motor. The product from the primary crusher passes by means of a 24 in. wide belt conveyor to a single deck vibrating screen that removes dirt from the stone, which is then stored in a 50-ton steel hopper. This stone is fed by a Locker electric vibrating feeder to two Kue Ken 24 in. x 12 in. secondary jaw crushers, set at approximately 2½ in. opening, and driven by one 50 h.p. motor.

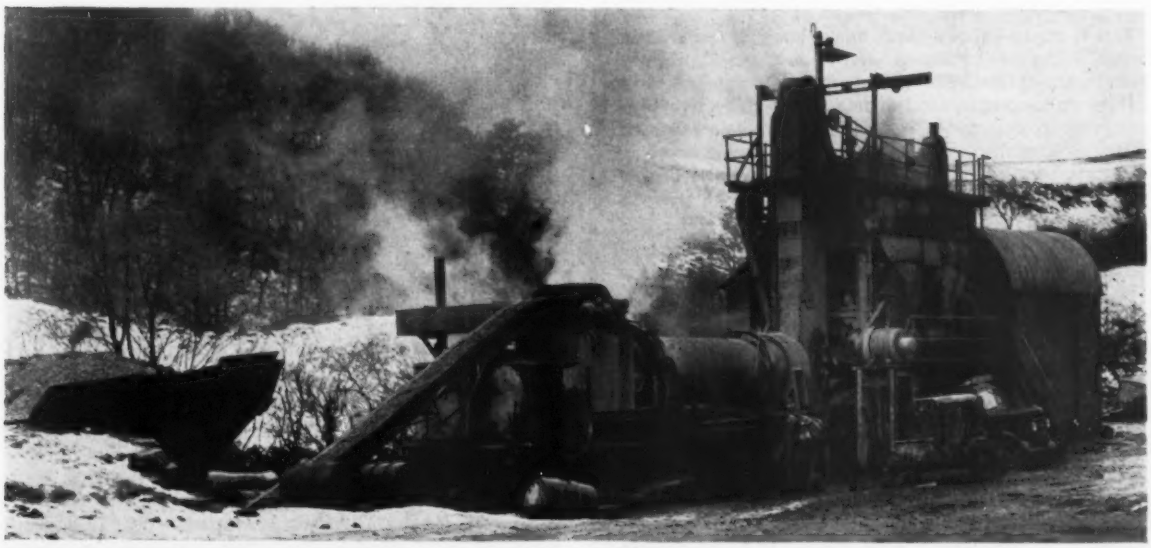
The product from these crushers is then fed by a belt conveyor to a two-way chute, from which part of the material is fed into a 3 ft. Simmonds Nordberg cone crusher for making chippings, and the other part by means of a bucket elevator to a vibrating screen, which grades the stone for coated macadam into hoppers containing four sizes—¼ in. to dust, ¼ in. to ½ in., 1½ in. and 2½ in. The product of the cone crusher is fed by bucket elevator to two vibrating screens, which grade the chipping into four sizes—$\frac{3}{16}$ in. to dust, ¼ in., ½ in. and ½ in.—and these are stored in steel hoppers of approximately 200 tons capacity.

Stone for the mixing plant is drawn from the dry stone hoppers into a lorry, which conveys it to the feed hopper of the mixing plant. Bitumen for the coated macadam is stored in two 6,000 gal. Clarmac electrically-heated lagged storage tanks, from which it is pumped to the plant, where it is carefully weighed before mixing with the stone.

The 415 V., 3-phase, 50 cycles, 4-wire supply is obtained from a 300 kVA, 11,000/415 V. step-down transformer and Combination fuse switch in a South Wales Electricity Board sub-station at the quarry edge, from where it is taken to a distribution sub-station in the quarry. The earth provided by the South Wales Electricity Board for neutral earthing of their transformer was utilized as the installation earth. Earth continuity throughout the installation was then obtained by using the good conductance properties of the double-wire amouring of the paper-insulated lead-covered underground cables and of the heavy-gauge galvanized conduit. The incoming supply to the quarry sub-station is connected to an English Electric cubicle type air-break circuit-breaker with over-current and under-voltage trips.

The crusher motors and the asphalt mixer motor are of the slipring type and hand-operated, dust and damp protecting stator/rotor starters with integral isolators, manufactured by the Electrical Apparatus Company, are installed to supply the necessary torque while limiting the current at starting. The crusher motors are of the totally-enclosed, closed-air-circuit type; that is, they are basically pipe ventilated with air inlet and outlet openings connected to a surface cooled radiator mounted on top of the machine. An external fan on the end of the motor shaft drives air through the tubes of the radiators to extract the heat.

Totally enclosed, fan-cooled squirrel-cage motors are used for all other drives, high-inertia drives and conveyors being equipped with high starting torque motors. All of these squirrel-cage motors are started direct on by pushbutton operated, weatherproof starters fitted with integral isolators.



The coated macadam plant showing, left to right, the intake conveyor, dust extraction duct, oil-fired rotary drier, mixing plant, and electrically operated tar boilers. The 30 h.p. English Electric motor shown drives the whole of the mixing plant.

Concealed Coalfields in the United Kingdom

There is little doubt that *Concealed Coalfields*, by Leonard J. Wills is out of the usual run of technical books, and for that reason the following review, a special contribution to *The Mining Journal*, is of particular significance. The work is published by Blackie and Son at 40s.

Since the general review of *Concealed Coalfields* by the Second Royal Commission on Coal Supplies in 1905, many new geological concepts and techniques have been developed, and a vast amount of geological information of all kinds has accumulated. The coal measures have been accurately zoned by means of fossils, enabling exact correlations of strata to be made from one region to another. Detailed memoirs and papers on individual coalfields have been published, and in recent years much borehole exploration has been carried out by oil companies, the National Coal Board, and the Geological Survey. On the whole, however, areas have been studied piecemeal as separate entities, and no really adequate modern synthesis exists. In this book, Professor Wills boldly attempts a review of the coal measures and overlying formations in the trias-filled basins between the exposed coalfields. Despite the comprehensive title, the subject-matter is limited to "A Palaeogeographical Study of the Stratigraphy and Tectonics of Mid-England in Relation to Coal Reserves". Several coalfields are thus not mentioned; the Kent coalfield, for example, is summarily dismissed because "it has already been fully described elsewhere".

MEASURE OF UNIFORMITY

The author injects an overdue measure of uniformity into the galaxy of local classifications in different coalfields by using marine bands for subdividing the coal measures. The Aegir (=Mansfield) Marine Horizon, being the most distinctive marker band recognizable in all the British and Subvariscan coalfields of N.W. Europe, is chosen as the main datum plane for all estimates of thickness or depth. Most of the valuable seams lie in the upper half (Main Coal Belt) of the author's Sub-Aegir Belt, which includes the coal measures from the top of the Millstone Grit upwards to the Aegir Marine Horizon. Everything overlying that horizon is regarded as Cover—the Carbo-Permian Cover conformable to the Main Coal Belt, and the unconformable New Red Sandstone Cover.

Part I, occupying two-thirds of the book, is entirely concerned with the "Paleaogeographical Control over the Distribution of Coalfields". Professor Wills rightly believes that the paleaogeographical approach provides a new angle in trying to determine where the workable coals were originally deposited, where they were later destroyed by erosion or preserved under other deposits, and also the distribution and thickness of these covering rocks.

The author's most novel and controversial innovation, and one which is likely to be the subject of much discussion and criticism in geological circles, is the introduction of a classification of the coal measures and overlying rocks into Palaeogeographical Stages (Palstages) and Substages. A Palstage is the shortest period that can be recognized with confidence, particularly where correlations are somewhat inexact. Each one "was a period during which the general geographical conditions from place to place within a given region remained fairly constant or more often, were subject to a gradual consistent change or cycle of changes . . . ". Relatively sudden palaeogeographical events (Palevents), represented by indicator horizons or marker-bands, are used to separate the Palstages. The author adopted this imaginative course mainly in order to overcome the difficulties of correlating unfossiliferous continental deposits. It is claimed that the scheme is meant to embrace and not supplant the existing stratigraphical classifications, and this intention should always be borne clearly in mind. Nevertheless, to designate Palstages P.1, P.2, etc., is to invite confusion, since such a notation already exists for Namurian Zones.

The palaeogeographical conditions and rock formations of five Palstages and their subdivisions are first summarized, and then elaborated in a wealth of detail, with copious footnotes. The author traces the successive geographies of mid-England during late Carboniferous, Permian and Triassic times, and gives an admirable account of the growth of the coal-swamp deltas of the Pennine geosyncline, and the subsequent earth-movements which brought about profound palaeogeographical changes; many areas were elevated and eroded, with the consequent loss of part or all of the Coal Belt.

The account is illustrated by numerous detailed palaeographical maps.

ACCESSIBLE COALS

Part II is concerned with the problem of "The Distribution and Accessibility of the Top of the Coal Belt," as deduced from the palaeogeographical reconstructions made in Part I. The present distribution of the Main Coal Belt is a resultant of earth-movements and erosion at several different times. The vagaries of erosion may remove some or all of the coal-bearing rocks, but may also make the coals more accessible by removing some of the thick barren strata overlying the profitable seams. The thickness patterns of the conformable cover that survived erosion to be covered by the New Red Sandstone, and the unconformable cover which has survived until to-day are analysed separately. By combining the two, and presenting the results on an isopach map, a comprehensive picture is obtained of the total thickness of cover above the coal belt from place to place. This allows the commercial accessibility of the coals to be assessed.

Part III deals with "The Accessibility of Workable Coals in the Concealed Coalfields". Some workable seams occur above the Aegir Marine Horizon, and on the basic assumption that coal seams probably extend into unknown ground and maintain their characters there, an isopach map has been constructed indicating in each area the depth to the highest seam which is deemed to be workable. The coal-bearing potentialities of each area are discussed in detail.

The publishers are to be congratulated on the pleasing appearance of this well-produced book. Much of the stratigraphical subject-matter is specialized and probably fully intelligible only to expert geologists. Some of the ideas and deductions based on palaeogeography might be of the utmost importance to the National Coal Board. An attractive feature is that both in the text and in his maps, the author distinguishes clearly between well-documented facts and speculations.

In his revolutionary "Palaeogeographical Atlas," Professor Wills modestly invited geologists to hurl their observations at his "Aunt Sallies". He now states that *Concealed Coalfields* contains "a lot of toy balloons ready to be burst by a prick from any new discovery". Readers will certainly derive pleasure for many years to come from wandering around the stimulating palaeogeographical fairground which the author has created.

MACHINERY AND EQUIPMENT

Timinium Alloy Coal and Coke Conveyor Buckets

In February, 1954, two aluminium conveyor buckets were installed for trial and observation at the Windsor Street (Birmingham) Works of the West Midlands Gas Board. The experiment was a co-operative venture with T. I. Aluminium Ltd. The buckets were fabricated by The New Conveyor Company Ltd. One bucket was fitted to the continuous coke conveyor

The aluminium coal conveyor bucket in foreground, in comparison with steel bucket on left

and one to the coal conveyor. The remaining buckets on each conveyor are the conventional steel type and an excellent opportunity was thus afforded for comparison of performance. Both aluminium buckets are in excellent condition after more than two years' continuous service.

The coke conveyor, which is out of doors, receives coke tipped from wagons and loads three concrete hoppers. The buckets are fed from the wagons by a 12 ft. chute of about 45 deg. pitch, which imposes on the bucket a fairly severe impact. The ½ cwt. or so of coke is emptied from the bucket by progressive tipping, controlled by a cam operating on the bucket-carrier frame; the abrasive action of the coke has had no significant effect on the surfaces of the aluminium bucket. A third mechanically testing condition occurs when the emptied bucket is tipped back to the normal position under its own weight, and its forward lip takes the impact against a bar built into the frame, which acts as a front-stop. Whereas many of the steel buckets exhibit damage caused by this impact along the lip, and especially at one edge of the lip, the aluminium bucket shows only a faint, even line and no appreciable denting.

Comparison of coke conveyor buckets. The aluminium bucket is at top of picture

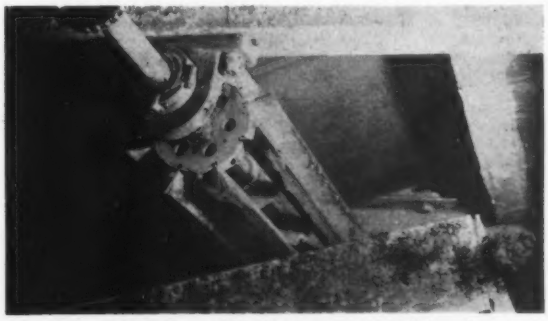
The corrosive conditions are so severe that up to three deep layers of rust are deposited on the old steel buckets. As rust forms, it is more and more easily removed by the abrasive action of the coke and a surface revealed which starts to rust in turn. This continuous action causes progressive thinning of the steel to the point of failure. The effective life of steel buckets on the coke conveyors is less than three years.

The resistance of the Timinium alloy to these conditions is such that the bucket is virtually as new. The illustration below shows clearly the clean surface of the Timinium alloy bucket, at the top of the picture, compared with the rust-scaled steel buckets beneath.

Much the same conditions naturally apply to the coal conveyor, situated within the retort house. The illustration opposite reveals the lasting qualities of the Timinium alloy bucket, compared with the steel one to the left, in these unfavourable conditions.

Cleaning Conveyor Belts by Brush

A new application in mining which has gained rapid success and general acceptance is the use of the conveyor belt brush for mining and general industry manufactured by The



The Kez Strip metal backed conveyor belt brush

Kleen-e-ze Brush Co. Ltd. The manufacturers state that the brush has operated successfully in such applications as the removal of iron ore deposits, wet cement and sand, coal, coke, breeze and similar materials. The brush can be adapted for use with plate conveyors in addition to its more general function of cleansing the belt unit.

Designated the Kez Strip metal backed conveyor belt brush, the method of operation of this item is obvious from the illustration reproduced herewith. The brush shown was installed by the National Coal Board (East Midlands Division). The brush showed less than 5 per cent wear after 10,000 brushing miles.

A New Range of Speed Regulators

Five new speed regulators have now been added to the Baldwin range of pneumatic equipment. The bore sizes are ⅛ in., ¼ in., ⅜ in., ½ in. and 1 in.

In most pneumatic installations, some means of controlling the speed of movement of the air cylinder is required. Furthermore, it is usually necessary for the speed to be different in each direction of movement. This new range of speed regulators has been designed to screw into the exhaust ports of the directional control valve, thereby throttling the escape of air from the exhausting end of the air cylinder.

A friction device prevents the micrometer adjustment from being disturbed by vibration. The maximum working pressure is 150 p.s.i.

MINING MISCELLANY

Lake Shore Mines, one of the leading gold producers in Canada, has acquired a major interest in Malartic Gold Fields, which owns producing gold mines in Quebec.

* * *

The Cementation Company has formed a new subsidiary known as Coal Gasification with an initial capital of £100. Its objects are concerned with the gasification of coal underground.

* * *

An Oslo consortium has obtained the rights to work the iron ore deposits at Longöy in the vicinity of Kragerö, which contain between 40 and 45 per cent of iron. They have been mined before, but not for many years.

* * *

Agreement has been reached in principal for the purchase of West German mining machinery for the development of the coal mines at Bukit Asam, Sumatra, within the framework of the credit agreement between West Germany and Indonesia.

* * *

Production of by-product sulphuric acid at copper and zinc plants in the U.S. during 1955 was 1,112,100 s.tons (basis 100 per cent), compared with 886,000 tons in 1954—an increase of 26 per cent. The acid reported is only that produced from the sulphur content of the sulphide ores.

* * *

The Bethlehem Chile Iron Mines Co. have started to work their new deposits at Romeral near La Serena, in Chile. The ores are being shipped through the newly installed loading port of Guayacan near Coquimbo. These new deposits take the place of those at "El Tofo," which have been worked since 1922 and are now almost exhausted.

* * *

The first consignment of nearly 10,000 tons of coal from North Vietnam to France left Campha Harbour on May 15, according to an announcement by Hanoi radio. The coal had been sold to the French Coal Import Association by the Hong Gai state-owned coal enterprise as a result of contracts signed between North Vietnam and French companies.

* * *

Dowsett Engineering (Australia), the Australian subsidiary of Dowsett Holdings, U.K., is to develop titanium-bearing ore deposits on Bathurst Island, near Darwin, which are believed to be the richest in Australia. It was reported that a new type of dredge designed specially for working these deposits would be built in the U.K. and would sail to Australia under its own power.

* * *

Oil has been produced in South Lousiana from the record depth of 21,443 feet. Whether or not production can be undertaken commercially, has yet to be determined, but this development has shown that oil can exist in apparently commercial quantities at the greatest depth to which even the most modern equipment can penetrate.

* * *

A survey of the Mineral resources of the Southern Cameroons is shortly to be undertaken, according to a recent announcement by the Minister of Lands, Mines and Power. Previous surveys have not yielded encouraging results. Because of the shortage of geologists no data have been given for the commencement of the survey, but it is hoped that the work will be started as soon as staff became available.

* * *

The labour shortage in the Netherlands state mines was referred to by the First Chamber in its written reply on the 1956 state mines budget; the number of workers dropped by 1,000 in 1955 and the decrease is still continuing. Many members asked for stronger measures to prevent workers leaving the Dutch mines for neighbouring industrial districts in Germany and Belgium. One specific suggestion was the introduction of a 40-hour working week for underground workers.

* * *

New coal deposits discovered in South Yakutia, in the Aldan River basin, U.S.S.R., are reported to contain seams stretching for some 420 miles, which are often as wide as 60 miles. They consist manly of high-quality coking coal and are conveniently situated for mining. The reserves are considered equal in importance to those of the Kuznetsk basin and the Donbas. Extensive iron ore deposits have also been discovered in South Yakutia in the vicinity of the coal deposits.

* * *

The "Jugometal" foreign trade undertaking, of Yugoslavia, is celebrating the completion of its first ten years of international trading. During this period it imported 5,000,000 tonnes of mine products and raw materials for the metal industries and exported about 8,500,000 tons of copper, bauxite, lead, iron ore, cement, etc., amounting in value altogether to about 100,000,000,000 dinars. The number of countries with whose consumers "Jugometal" maintains business relations has risen to thirty.

* * *

British Titan Products Company, of York, and African Explosives and Chemical Industries, of Johannesburg, have announced the joint formation in South Africa of a company to make titanium dioxide pigments. The plant is to be erected at Umbogintwini on the Natal coast, some 17 miles from Durban, and should reach the production stage towards the end of 1958. It is designed to meet the whole of the expanding demand for titanium dioxide in Southern Africa.

* * *

A report, entitled "Radioactive Deposits in New Mexico," has been published by the U.S. Government as Geological Survey Bulletin 1009-L. It concerns work done on behalf of the U.S. Atomic Energy Commission.

PERSONAL

Mr. Miles Beevor, deputy chairman and joint managing director of the Brush Group, Ltd., left for Canada on May 22. His objective is to stimulate the dollar sales of his companies' engineering products. Last year orders from Canada amounted in value to nearly £380,000, more than double that of the previous year.

* * *

"Coal in the Atomic Age" will be the subject of an address by Mr. E. F. Schumacher, economic adviser to the National Coal Board, at a meeting of the North Western Fuel Luncheon Club on June 6, 1956.

* * *

A score of leading British firms, many for the first time, are exhibiting at the 25th Poznan International Fair, June 17 to July 1, 1956. Mining equipment will be shown by Holman Bros., Ltd.

* * *

The sub-offices of Metropolitan-Vickers Electrical Co., Ltd., at Swansea have changed their address to 166 St. Helen's Road, Swansea. The company's sub-offices at Edinburgh are now at 61A Queen Street, Edinburgh 2.

* * *

The third International Light Metals Conference will be held at Leoben from June 7-9.

AGENCIES WANTED

Mr. Gordon MacDonald, Sales Manager, City Machinery Co., 73 Main Street, Winnepeg 2, Manitoba, Canada, wishes to represent U.K. manufacturers of conveyor belting, transmission belting and V-belt drives. B.O.T. Ref.: E.S.B./12962/56. Telephone: Chancery 4411, Extension 776.

CONTRACTS AND TENDERS

India

TEN/19253A. Supply and installation of a central coal preparation and coal cleaning pilot plant. B.O.T. Ref.: ESB/11972/56. Telephone, Chancery 4411, Extension 738 or 771.

* * *

International Co-operation Administration (I.C.A.) have announced the following future authorisations:

Iran	*Contract Period*	*Terminal Delivery date*	*Amount (in U.S. dollars)*
Construction, mining and conveying equipment (P.A. No. 65-740-99-B5-6212)	26/4/56-31/10/56	31/10/57	200,000
Thailand			
Non - metallic minerals (except petroleum) and non - metallic mineral products (PA No. 93.640-99-A6-6206) ...	25/4/56-31/12/56	31/7/57	200,000
Iran			
Copper and copper products (PA No. 65-692-99-B5-6210)	26/4/56-30/9/56	31/12/56	100,000
Aluminium & aluminium base alloys and aluminium products (PA No. 65-691-99-B5-6205)	26/4/56-30/9/56	31/12/56	75,000

B.O.T. Ref.: ESB1 12669/56/I.C.A.

METALS, MINERALS AND ALLOYS

COPPER.—Despite some fluctuations on the London market, the general trend of copper prices on both sides of the Atlantic has again been downward during the past week (see our London market report for details). Following the drop in the custom smelters quotation, which is now down to 40 cents., there are indications that fabricators are beginning to price their products on a copper price basis below that of the domestic producers—probably around a 43 c. basis. One way and another the U.S. domestic producers' price which for some weeks now has been the highest in the world, must come under increasing pressure, but as producers are reported to be fully sold for June, U.S. traders do not anticipate any cutback in the domestic price until producers books are opened for July sales, which may not be for another 10 days or so.

Certainly the U.S. producers' hesitancy in cutting a price, which they are known to consider to be unhealthily high, suggests considerable misgivings regarding the outcome of this summer's labour negotiations. Reports from the States suggests that the copper producers are in a tough frame of mind, and they may well have reconciled themselves to the probabiliy of a stoppage. Nevertheless the outcome of the negotiations will probably be strongly influenced by what happens to the steel wage talks which began yesterday.

Meanwhile it is still impossible to foresee how much further the free market price is likely to fall. All that can be said is that consumers are continuing to hold off and that it is clear from the figures published in this column last week that this cannot be attributed solely to deferred buying on a falling market but that it also contains an element of genuinely reduced consumer requirement.

The chairman of British Insulated Callenders Cables and of the London Electric Wire Company and Smiths have both addressed their shareholders during the past week on the subject of copper prices. The antithesis of their views reflects the difficulties inherent in a multi-price system. Thus, Mr. W. H. McFadzean, speaking to B.I.C.C. shareholders, whose company takes the bulk of its copper from Rhodesian Selection Trust, observed that "because we belive implicitly in the evidence of wide and frequent changes in price of any kind, we warmly welcomed the introduction of stabilised prices for copper early last May by our main suppliers, R.S.T. . . . They rightly made it a condition of their scheme that we, as fabricators, should pass over the benefit of their stabilised price to our customers . . . and both our customers and ourselves have greatly benefited from having stable prices and being able to plan ahead. Unfortunately we cannot provide all our requirements on this basis and therefore a considerable proportion have had to endure wide fluctuations in price almost daily."

On the other hand Mr. A. Noel Smith, whose company (London Electric Wire) do not buy from R.S.T., observed to his shareholders: "We and a number of other fabricators were not able to purchase any copper on the stabilised price basis. . . . You will, therefore, appreciate that for the greater part of last year we were trading at a disadvantage so far as copper was concerned. . . . The existence of two prices for copper sold in the U.K., one fixed by a single producer and the other determined in a free market, presents serious difficulties. The free market price reflects the supply and demand position all over the world and the fixed price follows, lagging behind the free price, thus producing some measure of stability. There are advantages and disadvantages in both methods of pricing, but there can be nothing but condemnation for conditions which permit of the two methods being in operation at the same time."

In the last sentence we feel that Mr. Smith has got to the heart of the matter. It is emphatically our view that in marketing there is no satisfactory half-way house between rigid price control and allocation and the unrestricted operation of the price mechanism. Any compromise between the two means either that the price mechanism is unable to do its work effectively or that controls, even if not open to abuse, lead to the dilemma reflected in the above quoted remarks.

The Chilean Copper Department expects that the American-owned Chilean mines will this year raise their output by 33 per cent above last year's figure, and will by 1960 have expanded output by a further 25 per cent. This suggests Chilean output of well over 500,000 tons this year which is substantially higher than any previous estimate we have seen.

Copper production in the Philippines during the first three months of this year rose to 5,689 tonnes compared with 2,899 tonnes in the corresponding period of 1955.

Western Uranium Mines drilling at Ravensthorp in Western Australia are reported to have located a copper orebody with reserves of over 4,000,000 tons averaging 1.6 per cent copper. A second orebody at a lower level is also being investigated and it seems possible that these deposits may warrant the erection of a smelter and a considerable expansion in mining operations.

It is announced in New Delhi that Russian experts believe that the copper deposits in the Khetari area of the Sikar district in West Bengal could be economically worked on a large scale basis.

Can-Erin Mines of Toronto has entered discussions with the Irish Government on re-opening copper mines at Allihies, County Cork, closed since the beginning of the century. The company is reported to have promised to spend $250,000 in prospecting. Another Canadian company (un-named) is said to have entered discussions on prospecting in the Roaring Water Bay district of Couunty Cork.

The American Silver Company has announced that it is producing copper strip 0.00025 in. thick, the thinnest copper ever produced commercially it is claimed. It will permit the manufacture of much smaller transformers and other electrical components.

LEAD AND ZINC.—Both the lead and zinc markets continue to have an easier look, and it is expected that monthly offerings to the stockpile will, on this occasion, be larger—probably considerably larger in the case of lead, where stockpiling is again becoming a significant market factor. The case of zinc is somewhat different, due to the loss of around 10,000 tons, mostly of high grade metal, which has resulted from the continued strike at the New Jersey Zinc Company's plants.

In the chairman's statement to shareholders of the Consolidated Zinc Corporation, extracts from which appear on page 686, Mr. John R. Govett underlines the significant failure of the U.S. mining industry to expand lead or zinc production to any extent, during the past two years of recovering prices, by suggesting that the more correct emphasis would be "to hazard a guess that, but for the Administration's stockpiling policy, mined production might have fallen very sharply." He goes on to observe that the tonnages which can still be acquired by the stockpile are sufficiently great to continue to ensure reasonable stability at around present price levels (although he does not tell us for how long) and concludes that looking further ahead "we may assume that the growth of industrial activity in the world at large and increasing population will call for greater tonnages of both metals."

In his statement Mr. Govett also draws attention to the present influence on base metal markets exerted by the considerable rise in ocean tramp rates during the past year or so. A major cause of this has been the heavy coal traffic between the States and Europe. Australian base metal shipments are naturally particularly affected by this increase and have further been subject to successive dock strikes while Australian import restrictions have helped to accentuate the shortage of available tonnage in Australian waters.

Amanda Mines Ltd. has announced that it plans to acquire ownership of Metaliferous Holdings Ltd., a lead-zinc copper operation on the Isle of Man, subject to the approval of Amanda shareholders. The Canadian company would give 300,000 of its own shares in return for assets which include an operating recovery mill with a capacity of 120 tons a day and rights to two mine groups known as the Snaefell and Foxdale properties. The present operation consists largely of salvaging dumps of the Foxdale mine, including a reported 400,000 tons of "profitable lead and zinc dumps". At the current rate of recovery, the announcement says, between 23,000 and 25,000 dollars' worth of concentrates are being shipped at six-week intervals to European smelters and Amanda plans to build an additional mill of the same capacity. Profits of the stepped-up salvage operation, the announcement adds, "will underwrite an intensive exploration and development drive" in the Foxdale and Snaefell areas, as well as in other prospects now being negotiated with local governments. Ore deposits of the Isle of Man, the announcement states, have not previously been investigated by present-day geophysical methods.

TIN.—As with copper so with tin there has been a noticeable slackening in the demand for tin, due partly to the settlement of the three-day Penang dock strike at the end of last week although probably due more to sympathetic reaction to the weakness in copper. Certainly there seems to be nothing in the consumption picture to justify a bearish view of tin.

The U.S. Bureau of Mines has reported this week that domestic tin consumption during the first quarter of this year was 10 per cent above that for the corresponding period of 1955, while U.S. tin consumption in March at 8,300 l.tons was the highest since January, 1951, with electrolytic tinplate lines

operating at peak levels. Beyond this it is now clear that the running down of the Texas smelter is happily going to coincide with the running in of the management of the Buffer Stock and on this front the only query which seems to remain, is the level at which the Texas smelter will be operated between now and next January. If, as has already been suggested in these columns, Washington were to be content merely with the gradual exhaustion of existing stocks and the making of token purchases just to keep the smelter ticking over—a policy which may or may not be adequate for the domestic political exigencies of the situation—this would mean that there would be a likelihood of the Buffer Stock being built up by around the end of this year to the 10,000 ton level, at which quotas can become operative.

Sir Ewen Fergusson's speech at the annual general meeting of the Straits Trading Company, which was referred to briefly in this column last week is reported in full on page 684. Of particular interest are Sir Ewen's observations on the political outlook in Malaya and Singapore, which obviously have a vital bearing on the fortunes of his company and indeed of the tin industry in general. We commend his observations to the attention of our readers.

BAUXITE.—Production of bauxite is rapidly being expanded in Jamaica. Reynolds Jamaica Mines Ltd. and Alumina Jamaica Ltd. both have expansion programmes in hand. The output of alumina is to be stepped up to 543,000 tons a year from the present rate of 230,000 tons annually. Last year Jamaica supplanted Surinam as the leading supplier to the U.S., though only by a very small margin. Shipments from Surinam totalled 2,462,655 tons against Jamaica's 2,527,741 tons. These figures represented 47 and 48 per cent respectively of total U.S. bauxite imports. Surinam newspaper, *Het Nieuws*, commenting on them, said they should be a warning to Surinam not to bind itself exclusively to the U.S. for its market. There were also European countries with aluminium industries, which should not be overlooked. Elsewhere, however, it has been pointed out that the growing world-wide demand for aluminium should cause Surinam's bauxite output to rise still further.

MICA.—The Office of Defence Mobilization has informed the Senate Committee on Interior and Insular Affairs that, because of the continued seriousness of the mica shortage, a programme was recently certified for research and development of substitute and alternate materials for natural mica in critical applications. Although a domestic purchase programme has been in effect for a number of years, only a small part of this mica meets strategic and critical specifications. ODM is opposed to the enactment of S. 3455, a bill presently before Congress, which seeks to extend the expiration date of the present domestic purchase programme to June 30, 1961. The stockpile objectives for both block and film mica are far from completion.

TUNGSTEN.—A few days ago it was reported from Washington that the U.S. Government planned to stop buying domestic tungsten in the near future. The Senate Committee on Interior and Insular Affairs has since been advised, however, that, although further purchases of this material cannot be justified from the defence standpoint, special provision should be made to continue purchases for a limited period. Mr. Felix A. Wormser, Assistant Secretary of the Interior for Minerals and Metals, said that temporary extension of the tungsten programme on a limited scale would give the government time to think over the development of the best plan to help the domestic tungsten mines. He suggested that the government might buy 1,000,000 s.ton units of tungsten over two years at a suggested price of $52.50 per unit, which compares with world prices of around $41 to $43 per unit. The present government-subsidized price is $63 per unit. Mr. Wormser indicated that this plan might cut domestic output in half and would mean the closing down of some tungsten operations.

Now that stockpile needs have been filled and output is double the amount which the U.S. Government requires, the ceiling on the use of tungsten in jet engines has been increased to 5.5 lb. per 1,000 lb. of trust from the former target of 4.6 lb., which had been established in 1957 when the metal was in short supply. The average of all engines reported, however, shows a use of tungsten less than 50 per cent of the target number. In effect, therefore, the Defence Department are telling the military departments and the industry that they can double their present use of tungsten if better engines would result. It is evident that the more extensive usage of tungsten in jet engines and gas turbines would materially improve the outlook for the tungsten industry, which still has to face the possibility of additional U.S. supplies being forced on world markets through the cessation of curtailment of the domesting purchasing programme.

The London Metal Market

(From Our Metal Exchange Correspondent)

After the fall in copper prices last week there was a sharp recovery last Friday afternoon only to be followed by renewed weakness on Monday. Demand from consumers on this side of the Atlantic and in America has been negligible, and a reduction in the custom smelters' price of 1 c. to 42 c. per lb. failed to stimulate interest. On Tuesday the price on the London Metal Exchange went below £300 per ton for the first time since January, 1955, and the custom smelters reduced their price a further 2 c. to 40 c. per lb. Scrap copper in the U.S. is now quoted at 30 c. per lb. The R.S.T.'s price has been reduced to £320 per ton effective May 28.

A settlement of the Penang dock-workers' strike was announced late on Friday, and tin prices have declined partly in sympathy with those of copper. On Thursday morning the Eastern price was equivalent to £749½ per ton c.i.f. Europe.

Lead has been quiet with only moderate consumer demand, and prices have slipped back a little. Owing to the approach to between £3 10s. and £4 per ton. Zinc has, to a certain extent, followed copper. These conditions seem likely to continue.

Closing prices and turnovers are given in the following table :

	May 24		May 31	
	Buyers	*Sellers*	*Buyers*	*Sellers*
Copper				
Cash	£313	£314	£293	£293½
Three months	£309	£309½	£291½	£292
Settlement	£314		£293½	
Week's turnover	6,475 tons		7,450 tons	
Tin				
Cash	£752	£753	£725	£726
Three months	£752	£753	£725	£726
Settlement	£753		£726	
Week's turnover	465 tons		880 tons	
Lead				
Current half month	£110½	£111	£109½	£109½
Three months	£108½	£109	£106½	£106½
Week's turnover	2,350 tons		5,875 tons	
Zinc				
Current half month	£92½	£93	£91½	£91½
Three months	£90½	£91	£89½	£89½
Week's turnover	5,350 tons		4,725 tons	

OTHER LONDON PRICES — MAY 31

METALS

Aluminium, 99.5%, £189 per ton
Antimony—
English (99%) delivered, 10 cwt. and over £210 per ton
Crude (70%) £200 per ton
Ore (60%) bases 23s. 6d./24s. 6d. nom. per unit, c.i.f.
Bismuth
(min. 1 ton lots) 16s. lb. nom.
Cadmium 12s. 0d. lb.
Chromium, 6s. 11d. lb.
Cobalt, 21s. lb.
Gold, 249s. 8d.
Iridium, £29/31 oz.
Manganese Metal (96%-98%) £269 according to quantity
Magnesium, 2s. 4d. lb.
Nickel, 99.5% (home trade) £519 per ton
Osmium, £24/27 oz. nom.
Osmiridium, nom.
Palladium, £8 0s./£8 10s. oz.
Platinum U.K. and Empire Refined £34/£35 oz. Imported £37 0s./£38 0s. oz.
Rhodium, £42.
Ruthenium, £15/£17 oz.
Quicksilver, £86 10s./£87 ex-warehouse
Selenium, 112s. nom. per lb.
Silver, 79d. f.oz. spot and 78¾ f'd.
Tellurium, 15s./16s. lb.

ORES, ALLOYS, ETC.

Bismuth .. .. 50% 7s. 3d. c.i.f.
40% 6s. 3d. lb. c.i.f.
Chrome Ore—
Rhodesian Metallurgical (semi-friable) 48% £15 15s. 0d. per ton c.i.f.
,, Refractory 45% .. £14 15s. 0d. per ton c.i.f.
,, Smalls 42% .. £12 15s. 0d. per ton c.i.f.
Magnesite, ground calcined .. £28 0s./£30 0s. d/d
Magnesite, Raw (ground) .. £21 0s./£22 0s. d/d
Molybdenite (85% basis) .. 8s. 2½d. nom. per lb. c.i.f.
Wolfram and Scheelite (65%) .. 264s.0d./269s. 0d. c.i.f.
Tungsten Metal Powder (98% Min. W.) .. 21s. 0d. nom. per lb. (home)
Ferro-tungsten (80%-85%) .. 18s. 0d. nom. per lb. (home)
Carbide, 4-cwt. lots .. .. £39 3s. 9d. d/d per ton
Ferro-manganese, home .. £66 0d. per ton
Manganese Ore Indian
Europe (46%-48%) basis 125s. freight .. .. 103d./105d. per unit c.i.f.
Manganese Ore (43%-45%) .. 97d./98d. per unit c.i.f.
Manganese Ore (38%/40%) .. 90d./92d. per unit
Brass Wire .. .. .. 3s. 0½d. per lb. basis
Brass Tubes, solid drawn .. 2s. 4½d. per lb. basis

COMPANY NEWS AND VIEWS

London S.E. Prices Show Little Change

In the face of severe fluctuations on Wall Street which, at one point, brought the *Dow Jones Industrial Index* down to 468.81 from 473.51 on May 24, London Stock Exchange prices remained surprisingly steady during the past week.

The Financial Times Industrial Ordinary Index moved narrowly between 184.5 and 183.7 to which level it had declined by May 30.

In many ways it was a momentous week in the United States. Business sentiment was subjected to several broadsides from industrial spokesmen of high calibre including Secretary of Commerce Weekes and Mr. Henry Ford. While the former referred to the U.S. economy as being "very spotty" Mr. Ford joined Mr. Harlow Curtice in downgrading estimates of automobile sales for 1956 to below 6,000,000 level. Besides this, some evidence had indicated faulty steel sales. Reports that tyre manufacturers were experiencing redundancy also upset markets.

Bad as all this sounds, a technical rally—expected for some time by Wall Street observers—which raised the *Dow Jones Index* sharply by over 8 points took place on Tuesday. But owing to markets being closed on Memorial Day, Wednesday, May 30, it is not, as we go to press, yet possible to report whether or not this recovery has been continued.

London also had to cope with several adverse factors. These included Mr. Macmillan's strongly worded warning regarding the effect that further wage awards must have. In addition, the rise in the price of coal was taken badly. Sterling was lower in the latter part of the week. But generally speaking, markets showed a surprising resistance to the foreboding investment climate.

Once again gold made an uninspiring showing and *The Financial Times Gold Share Index* declined from 78.9 to 77.8, an all-time low. O.F.S. issues took some sharp knocks. Notable amongst these was President Brand which dropped to about 54s. compared with a high point of 64s. this year. Robinson Deep fell to 7s. 6d. on the adverse underground report, but Vogels went better on the profit outlook. Anglo American declined to £7 after the report but Union Corporation were harder on the Chairman's reference to operations at Kinross, Bethal.

After suffering widespread declines coppers improved with Wall Street. Diamonds remained dull while tins made a mixed showing under the influence of the lower metal price.

Long Term Outlook for Uranium Mining

The outlook for uranium has been in a constant state of revision ever since the veils of secrecy enshrouding the extraction and production of this metal were parted wide enough to make it generally known that nuclear energy programmes were not entirely dependent upon uranium as an energy fuel in the atomic age.

While the layman is very much at the mercy of atomic scientists and governments for the scope and extent of their appreciation of uranium's potentialities, it is now clear that demand for uranium on the basis of present needs and conditions will almost certainly be considerably reduced after March 31, 1962, the date on which the present A.E.C. programme expires. This, of course, is not to say that demand for the metal for other uses will not be found but the warning is there for all to see that the future of the metal beyond 1962 must await further technical developments before it will be possible to pronounce with any certainty on its future.

This argument is developed in some detail under "Notes and Comments" but suffice it to note here that the U.S. Government's declaration that after March 31, 1962, it will only continue to buy domestically produced uranium concentrates for another five years which moreover will be limited to 500

LONDON STOCK EXCHANGE PRICES — MAY 24 - MAY 30, 1956

Finance	Price May 30	+ or — on week
African & European	2/-	.....
Anglo American Corpn.	7	—1/-
Anglo-French	19/3	.....
Anglo Transvaal Consol.	1/-	.....
Central Mining (£1 shrs.)	35/-	—9d
Consolidated Goldfields	51/9	—9d
Consol Mines Selection	1	—1/-
East Rand Consols	2/1½	.....
General Mining	3	—1/-
H.E. Prop.	7/6	.....
Johnnies	33/9	—6d
Rand Mines	3	—1/-
Rand Selection	1	—1/-
Union Corporation	33/9	+6d
Vereeniging Estates	4	—1/-
Writs	31/3	.....
West Wits.	34/-	—6d
Rand Gold		
Blyvoor	22/7½	—4½d
Brakpan	6/-	+3d
Buffelsfontein	24/1½	—3d
City Deep	10/-	.....
Consol. Main Reef	16/10½	—7½d
Crown	1	—1/-
Daggas	2	—1/-
Dominion Reefs	17/9	+6d
Doornfontein	20/10½	—6d
Durban Deep	23/9	.....
E. Champs	3/3	.....
E. Daggas	8/10½	+4½d
E. Geduld (4s. units)	30/3	.....
E. Rand Props.	48/3	—1/4½
Geduld	4	—1/4
Govt. Areas	4/1½	+1½d
Grootvlei	20/1½	+6d
Hartebeestfontein	35/9	—7½d
Libanon	6/10½	—1½d
Luipaards Vlei	13/4½	—3d
Marievale	19/7½	+3d
New Kleinfontein	4/1½	+3d
New Pioneer	13/1½	.....
Randfontein	39/9	+9d
Robinson Deep	7/9	—2/4½
Rose Deep	10/6	.....
Simmer & Jack	3/6	.....
S.A. Lands	21/3	.....
Springs	2/6	+1½d
Stilfontein	23/-	—6d
Sub Nigel	30/-	—7½d
Vaal Reefs	27/6	—3d
Van Dyk	2/3	.....
Venterspost	11/7½	+1½d
Vlakfontein	17/7½	+1/3
Vogelstruisbult	17/1½	—1½d
West Driefontein	5½	—½
Rand Gold contd.		
W. Rand Consolidated	1	—1/-
Western Reefs	1	—1/-
O.F.S. Gold		
Freddies	6/9	.....
Freddies Consolidated	4/4½	+4½d
F.S. Geduld	4	—1/-
Geofries	10/4½	—1/3
Harmony	23/4½	—3d
Loraine	5/9	+6d
Lydenburg Estates	15/-	.....
Merriespruit	8/7½	—1½d
Middle Wits.	11/10½	+1½d
Ofsits	52/9	—6d
President Brand	53/9	—2/6
President Steyn	29/-	.....
St. Helena	24/6	—4½d
Virginia Ord.	10/6	+3d
Welkom	19/3	—6d
Western Holdings	3	—1/-
West African Gold		
Amalgamated Banket	1/6	.....
Ariston	4/6	—1½d
Ashanti	17/3	+6d
Bibiani	2/1½	.....
Bremang	1/4½	.....
G.C. Main Reef	2/-	.....
Konongo	1/9	.....
Marlu	2½d	.....
Taquah	1/7½	.....
Western Selection	8/4½	.....
Australian Gold		
Gold Mines of Kalgoorlie	12/9	.....
Great Boulder Prop.	11/-	—3d
Lake View & Star	13/6	—1½d
Mount Morgan	21/6	.....
North Kalgurli	8/3	.....
Sons of Gwalia	2/10½	.....
Western Mining	9/6	—1½d
Miscellaneous Gold		
Cam & Motor	8/4½	—1½
Champion Reef	6/4½	.....
Falcon Mines	7/6	.....
Globe & Phoenix	26/-	.....
Motaps	1/-	—1½d
Mysore	3/3	.....
Nundydroog	9/6	.....
St. John d'el Rey	20/-	+1/9
Zauns	2½	—¼
Diamonds and Platinum		
Anglo American Inv.	8½	—1/-
Casts	22/10½	—6d
Cons. of S.W.A Pref.	10/7½	—1½d
De Beers Defd. Reg.	5	+¼
De Beers Pfd. Reg.	14	.....
Pots Platinum	12/-	—3d
Waterval	19/-	—6d
Copper		
Bancroft	40/-	—1/3
Chartered	67/6	—6d
Esperanza	3/1½	—1½d
Messina	8½	—1/-
Nchanga	13	—1/-
Rhod-Anglo-American	5	—¼
Rhod. Katanga	26/3	.....
Rhodesian Selection	47/6	—1/-
Rhokana	37½	—1½d
Rio Tinto Reg.	2	—1/-
Roan Antelope	26/9	—1/6
Selection Trust	4½	—1/-
Tanks	7½	—¼
Tharsis Sulphur Br.	4½	.....
Tin (Eastern)		
Ayer Hitam	21/-	.....
Gopeng	8/7½	.....
Hongkong	5/10½	—3d
Ipoh	24/-	.....
Kamunting	8/6	.....
Kepong Dredging	3/-	.....
Kinta Tin Mines	13/9	—6d
Malayan Dredging	9/3	.....
Pahang	11/-	.....
Pengkalen	12/6	+3d
Petaling	8/-	.....
Rambutan	25/-	.....
Siamese Tin	10/6	+1½d
Southern Kinta	14/10½	—3d
S. Malayan	7/6	+3d
S. Tronoh	5/10½	—1½d
Sungei Kinta	16/9	+1/7½
Tekka Taiping	9/-	.....
Tronoh	8/6	.....
Tin (Nigerian and Miscellaneous)		
Amalgamated Tin	10/6	—4½d
Beralt Tin	44/6	—1/-
Bisichi	4/9	—3d
British Tin Inv.	20/9	—1/-
Ex-Lands Nigeria	2/6	.....
Geevor Tin	13/9	—6d
Tin (Nigerian and Miscellaneous) contd.		
Gold & Base Metal	1/7½	.....
Jantar Nigeria	5/-	—4½d
Jos Tin Area	12/3	.....
Kaduna Prospectors	1/6	.....
Kaduna Syndicate	2/3	.....
London Tin	9/7½	+1½d
United Tin	1/-	—1½d
Silver, Lead, Zinc		
Broken Hill South	55/6	—2/-
Burma Mines	6/-	.....
Consol. Zinc	51/3	+6d
Lake George	13/6	—1½d
Mount Isa	17/7½	.....
New Broken Hill	41/6	.....
North Broken Hill	4	—¼
Rhodesian Broken Hill	10/3	—6d
San Francisco Mines	23/3	—3d
Uruwira	4/9	—3d
Miscellaneous		
Base Metals and Coal		
Amal. Collieries of S.A.	47/6	—2/3
Associated Manganese	38/3	—6d
Cape Asbestos	9/4½	.....
C.P. Manganese	28/6	—3d
Consol. Murchison	2	+¼
Natal Navigation	62/-	.....
Turner & Newall	105/6	—3/6
Wankie	18/-	+6d
Witbank Colliery	4½	.....
Canadian Mines		
Dome	$25½	.....
Hollinger	$47½	—1
Hudson Bay Mining	$148	.....
International Nickel	$168	—3½
Mining Corpn. of Canada	£9	—¼
Noranda	$102	—5½
Quemont	£9¼	.....
Yukon	4/4½	.....
Oil		
Apex	34/-	+6d
Attock	40/3	+3d
Br. Petroleum	145/-	+1/6
Burmah	92/6	+4/1½
Canadian Eagle	58/-	+1/-
Mexican Eagle	20/6	—1½d
Shell	8½	+½
Trinidad Oil	41/3	+1/9
T.P.D.	40/-	.....
Ultramar	40/9	—7½d

tons of uranium oxide annually from any one mining operation, must give some cause for uneasiness to all those interested in mines whose major source of revenue derives from uranium.

While this is rather early in the day to worry what will happen after 1962 the implications for the shares of all such mining companies is plain.

The Outlook for Anglo American

In view of the possibility that present industrial difficulties in the U.S. could develop into a sizeable readjustment of the economy, investors might be forgiven for regarding the Anglo American Corporation of South Africa—with its large interests in copper and diamonds—as being in a somewhat dubious position. But, while investments in these two fields would naturally be most vulnerable to any such recession, it is worth bearing in mind that the Corporation's gold holdings are believed to constitute the largest proportion of its total portfolio. Against this background it will, therefore, be extremely interesting to hear what Sir Ernest Oppenheimer has to say about the general outlook for the Corporation in his statement to shareholders due to be published in the very near future. Anglo American's consolidated balance sheet at December 31, 1955, has shown an expansion in total assets to £99,354,674 from £92,221,620 at the end of the preceding year. Quoted investments having a balance sheet value of £24,795,979 (£23,996,615) had a market worth of £59,380,977 compared with £65,985,402. Government, Municipal and Electricity Supply Commission stock entered at £3,620,053 (£3,639,035) also had a lower market value at £3,624,825 against £3,676,168 at the end of 1954. Loans, including those to associated companies, totalled £18,877,583 against £26,008,547 while debtors and cash amounted to £42,358,586 compared with £31,306,866. On the opposite side of the balance sheet, current liabilities included £56,519,120 (£45,172,549) representing loans from associated companies and others. Provision for taxation totalled £1,048,033 (£999,177) while sums due to creditors of £3,898,977 compared with £8,984,314.

At their present price of about £7, Anglo American 10s. ordinary shares yield about 5 per cent. Meeting, Johannesburg, June 22.

Selection Trust Give 10 Per Cent More and 1 for 20

Selection Trust, the base metal mining finance house, is raising its final dividend payment by 9d. to 4s. 3d. making, with the higher interim already paid of 1s. 9d. (1s. 6d.) a total distribution for the year ended March 31, 1956, of 6s. per 10s. stock unit. Moreover, the distribution is being paid on a capital of £2,354,518 (£2,242,399) as increased by a 5 per cent scrip issue. The Trust is also proposing a new free issue of one new share for every twenty stock units held.

That Selection Trust has been able to step up its dividend and propose a new scrip issue ought not to come as a surprise. The American Metal Company, in which the company holds approximately 25 per cent of the common stock, distributed more last year as have the Northern Rhodesian copper companies in which the Trust has a large interest. The foregoing comment crystalizes into hard fact in the preliminary statement wherein it is shown that revenue received by way of dividend and interest expanded to £2,920,024 from £1,978,387. This advance in earnings easily compensated for the fall in profits derived from the realization of investments which at £94,613 fell well short of the preceding year's income from this source of £176,788. After taking into account a higher sundry revenue of £69,314 against £48,937, the company's profit picture reveals that the group revenue for the year increased by as much as £880,000 or, to be more precise, from £2,204,112 for 1954-55 to £3,083,951. Tax liabilities were higher at £1,557,685 (£1,032,813) leaving the net balance some £331,000 higher at £1,433,322 compared with £1,102,086. Mr. A. Chester Beatty is chairman. Meeting, London, July 19.

15 Per Cent of Rio Tinto's Portfolio in Uranium

Besides giving a most interesting and authoritative survey of the uranium outlook (which is reprinted on page 682 of this issue) Mr. Gerald Coke, chairman of The Rio Tinto Company, said, in his statement to shareholders, that investments in this field now amounted to about 15 per cent by value of the total portfolio. The terms of Government contracts for the purchase of uranium oxide ensured—as a matter of policy—that capital costs were amortized by the end of the contract period and provided in addition for a reasonable profit. The commercial position of uranium for the periods of the contracts was, therefore, covered in *most cases* until 1962. Whatever the position might be after that date therefore, it would appear that the company cannot lose—so long, of course, as the uranium proves to be available as expected.

Mr. Coke stated that investments held in base metal producing companies comprised about 60 per cent in value of the company's assets. Moreover, dividends from these sources provided the greater proportion of income and were likely to remain in that position during the period in which associated companies in Canada, Australia and Africa were developing their properties and carrying on their exploration programmes.

Difficulties at Robinson Deep: Dividend Vulnerable

The chairman of Robinson Deep has referred in detail to recent difficulties experienced at the mine. During March last, values, he said, in some of the longwall and certain other faces at the lowest levels had begun to show signs of deterioration. But from stoping results in adjoining blocks there had been at that time reason to expect that this would only be a temporary phase. Unfortunately, however, instead of values improving again in April and May, the gold content in these faces had progressively declined and become entirely unpayable.

Because of this sudden and unpredictable major decline in values, preparation of longwall faces in the lowest levels —which had been expected to produce an appreciable tonnage of payable ore—had to be stopped and a drastic modification of the development programme put in hand. Action had accordingly been taken to stop the completion of the Turf East Sub-Incline Shaft; to cease development in levels served by that shaft, and to transfer personnel involved to central and upper areas with the object of preparing stope faces as fast as possible.

While these new stope faces were being established, throughput from remaining payable stopes at low levels and from other sources was likely to be somewhat less than that of 75,000 tons milled during April. As there was no possibility of selective mining, and owing to the small scale of operations envisaged, it was inevitable that some working losses must therefore be faced.

Some degree of flexibility would, however, be restored when stope faces had been established in the mine's central and No. 2 Shaft areas. With economies made possible by concluding Turf Sub-Incline Shaft operations, working profits could again be expected. But this depended upon no further serious increases in working costs taking place or another sudden drop in values eventuating. The chairman stated that if it was decided to declare an interim dividend in respect of the current year, it would have to be a small one. It might even have to be decided to pass next month's declaration.

Durban Deep Development Enters New Lease Area

In reply to questions at the recent meeting of Durban Roodeport Deep, Mr. N. W. S. Lewin, the chairman, stated that development on the 40th level Main Reef had just recently entered the new lease area west of the company's property. In a drive west, 70 ft. had been exposed giving an average value of 474 in. dwt. over 112 in. In a drive east, 30 ft. had been exposed with an average value of 565 in. dwt. over 84 in. Prospects, said Mr. Lewin, were encouraging, but more development was required. It was thus intended to probe further into the area to get a better idea of values. If tonnages and gold contents warranted the expenditure, consideration would, in due course, be given to the question of sinking a new shaft.

Encouraging Outlook for Spaarwater

Speaking to shareholders of Spaarwater Gold Mining Company regarding operations during the year ended December 31, 1955, Mr. J. M. M. Ewing, the chairman, said that the past financial year had seen broad improvements in prospects. Increased ore reserves had provided greater stability for the conduct of operations and a firmer basis from which to plan exploration. Improvements in mining and sorting techniques had brought additional ore within the range of economic mining, while major development commenced on the western side of the mine would assist materially in the mining and transport of ore to be extracted from this area.

Most encouraging of all, however, had been the commencement of a new main heading that would prospect still further towards the west. The company, said Mr. Ewing, was now in a sound position to uncover any new payshoots that may exist along the western boundary of the lease area. The outlook, he said, presented a prospect of considerable interest although it was, of course, not possible to forecast the trend of impending developments.

Consolidated Zinc Expansion

The group balance sheet of the Consolidated Zinc Corporation at December 31, 1955, showed an expansion in total assets to £39,990,116 from £34,857,068 at the end of 1954. Fixed assets rose to £13,910,162 from £13,320,045 while investments and advances also moved up to £5,024,887 from £4,752,927. Current assets at £21,055,067 showed a considerable increase over the previous year's figure of £16,784,096 and exceeded current liabilities by about £11,500,000. During the past financial year the Corporation earned net profits of £2,344,928 compared with £2,383,378 in 1953. Dividends absorbed £1,325,688 against £963,393 and undivided profits of £967,005 (£905,445) were carried forward.

Good Liquid Position of Central Provinces Manganese

Total assets of the Central Provinces Manganese Ore Company at December 31, 1955, at £4,442,342 compared with £4,747,954 in respect of the previous year. Valuation of fixed assets rose to £1,066,914 from £974,246. And although current assets declined to £3,132,608 the company had net liquid assets of some £2,300,000. During the past financial year net profits declined to £646,153 from £899,284. After dividends, which absorbed £525,000 (£625,000), the balance carried forward moved up to £257,130 from £228,790. Mr. H. R. Holmes is chairman. Meeting, London, June 12.

Company Shorts

B.I.C.C. Enjoys Prosperous Year.—British Insulated Callender's Cables achieved a group trading profit for the year 1955 of £11,852,852, an increase of £4,473,647 and brought about largely as a result of higher output, improvement in efficiency, and the benefit of the substantial capital expenditure made in recent years. Taxation absorbed £2,102,896 more at £4,839,058 giving a group net profit for the year of £5,128,161, of which £626,629 is applicable to minority shareholders and £4,501,532 to members of B.I.C.C

The final dividend proposed of 8½ per cent (7½ per cent last year) makes, with the interim already paid of 4 per cent (2½ per cent last year), a total distribution of 12½ per cent against 10 per cent less tax on the ordinary issued capital of £15,000,000 converted into £1 stock units. This absorbed a net £1,082,432 and, after allocating £2,638,378 to reserves, the balance carried forward totalled £4,607,751. W. H. McFadzean is chairman and managing director. Meeting, Liverpool, June 15.

Western Selection and Development Group's March Quarterlies.—Owing to the stoppage of normal mining operations during the recent general strike on the Gold Coast of African mineworkers. Amalgamated Banket, Bremang, Ariston and G.C. Main Reef have not published their usual statistical summaries of the mining results for the March quarter, 1956. Output of all four companies is now returning to normal.

Ashanti Cuts Reef on Level 41.—A mine cable published at the beginning of this week by Ashanti Goldfields Corporation stated that a crosscut on level 14 has intersected the reef. No values accompanied this announcement but these are being cabled later. The information will be awaited with a good deal of interest as the values will provide a good indication of the way in which the mine is continuing to open up at depth—a most important point now that the new Eaton Turner shaft will soon be coming into operation enabling thereby the rich ore already proved at the bottom of the mine to be hoisted and treated.

Silvermines Lead and Zinc.—Silvermines Lead and Zinc, whose mines are located at Shallee, Co. Tipperary, Eire, has announced that an approach has been made to the company by certain Canadian mining interests desirous of acquiring the property for large scale development.

Sungei Kinta Pays More.—Sungei Kinta Tin Dredging whose net profit for the year 1955 has been announced in a preliminary statement as £62,548 is recommending the payment of a dividend of 4s. per £1 stock unit which, if approved, will be payable on July 12, the same date as the Annual General Meeting. In 1954 net earnings amounted to £5,039 and the dividend distribution was 1s. per £1 stock unit.

Idris Hydraulic's New Lease Area.—Idris Hydraulic Tin have announced that the mining lease over approximately 9½ acres of road and road reserve at the Batu Karang Section, to which the chairman referred in his address at the last annual meeting has been approved subject to the satisfactory deviation of the main road, work upon which has now been commenced.

BICC

SALES INCREASE OF 36 PER CENT

DIRECT EXPORTS TOTAL £18m.

The 11th Annual General Meeting of British Insulated Callender's Cables Limited will be held on June 15 at the Adelphi Hotel, Liverpool.

The following is an extract from the circulated Statement by the Chairman and Managing Director, **Mr. W. H. McFadzean, C.A., Companion I.E.E.**

Profit on Trading has increased by £4,473,647 or 61% to £11,852,852. A combination of several favourable factors has contributed to this record, but the two main reasons have been the increase of 36% in sales with its great benefit to our load factor and, of at least equal satisfaction to your Directors, the benefits now being received from our substantial capital expenditure over recent years at home and abroad.

After adding other Income and deducting Depreciation and the other items detailed in the Profit and Loss Account, the Group Profit left available from 1955, subject only to Taxation, is £4,024,603 higher at £9,967,219.

Out of this Taxation absorbs £4,839,058 or almost 50% of the profit we have earned through our year's endeavours and initiative. It is difficult to refrain from passing strong comment on this subject but, under present abnormal national conditions, I will only emphasize the added difficulty to our financial problems through having to pay out in hard cash this immense sum for taxation and, at the same time, finance the apparently ever-increasing costs of materials, wages, freights, etc., in addition to the capital expenditure we consider essential to develop our business and efficiency.

In view of the necessity of strengthening certain reserves in the ordinary prudent conduct of the business, it is proposed to transfer £3,331,355 to strengthen Revenue Reserves and Carry Forward, in addition to adding to Special Capital Reserve the profit of £87,740 made on the Realization of Investments.

Following the Interim Dividend of 4% (less income tax) paid on the Ordinary Stock before our recent new issue, we propose a Final Dividend of 8½% (less income tax) on the new Ordinary Capital. Although this gives a reasonable return to Stockholders and complies with recent Government requests for restraint of dividends, it is only fair to point out to all parties concerned with the affairs of our Group, that it means a distribution to Ordinary Stockholders of only some 22% of the profit available after taxation.

The Balance Sheet is a strong one with disclosed Reserves of over £2,000,000 and manufacturing assets shown at very conservative figures.

Sales of the Group were 36% higher at the record figure of £119,000,000.

A considerable proportion of the increase is accounted for by the higher prices ruling for many of our raw materials and copper in particular, but there has also been a substantial increase in the physical volume of our output due mainly to (a) the consistently high demand for practically all our products as distinct from the somewhat uneven load factor of the previous year; and (b) the benefits of the extensive modernization and expansion of manufacturing facilities carried out in recent years enabling us not only to increase the volume of our production but also to comply with the frequent demands for quick delivery and the ever-increasing emphasis being rightly placed on price and quality.

Competition overseas during 1955 has been more intensive than ever and profit rates have suffered accordingly. Through the sustained efforts of our personnel at home and abroad, often involving arduous and long journeys, we have nevertheless done business in 120 countries and achieved direct exports from this country of £18,000,000, including a substantial amount to the dollar area.

The results for 1956 to date are good and we have a satisfactory order book for many of our products.

I would sum up the outlook for 1956 by saying that whilst I view with some caution and certainly cannot visualize the uniformly favourable conditions of 1955 being repeated, I feel we can look forward to satisfactory results.

From the longer term aspect I have every confidence. The electrical field must be an expanding one, and the fact that it is becoming more and more technical is all in our favour. We have a wide base of products and, through our overseas policy, a world-wide sphere of activity. Above all, we have the personnel—the greatest single factor in assessing the future of any concern.

THE RIO TINTO COMPANY LIMITED

URANIUM: ASSESSMENT OF FUTURE COMMERCIAL POTENTIALITIES

EXPANDING DEMAND ENVISAGED TO REPLACE DIMINISHING MILITARY REQUIREMENTS

MR. GERALD COKE'S VIEWS

The 83rd annual general meeting of The Rio Tinto Company, Ltd., was held on May 29 at the Chartered Insurance Institute, 20 Aldermanbury, London, E.C.2, **Mr. Gerald Coke** (the chairman) presiding.

Mr. P. H. Truscott (the Secretary) read the notice convening the meeting and the report of the auditors.

The Chairman said:

My first and sad duty is to record the death, earlier this year, of Lord Bessborough who had been a Director of your Company for twenty years and had been its Chairman since 1947. This is not the place to speak of his many achievements in a long career of public service, but I know that you, as shareholders, and we, as Directors, of The Rio Tinto Company would wish to record the debt which we owe to him as a colleague and the affection we felt for him as a friend. He brought to the Company's service his wide experience of public affairs together with a dignity and kindliness which made him the ideal Chairman for a company with extensive foreign interests. To the staff at the mines in Spain, British as well as Spanish, he came to represent all that is best in the traditions of this country; and his real interest in their affairs endeared him to them and to their families. As the Group expanded its interests, he was able to convey to an ever-widening circle of employees and associates the sense that he was, both in his personal capacity and as the Chairman of the Company, the inheritor of a great tradition. We shall miss his wise counsel and we mourn his loss, but his memory will live in the hearts of those at all levels in this Company who had the joy and privilege of working with him.

The Board have elected me to succeed Lord Bessborough as their Chairman. I cannot hope to adorn the appointment as he adorned it or to bring to it the qualities which were his in full measure; but with the support my colleagues I will do my best to carry on the traditions of this great Company.

"NEW LOOK" ACCOUNTS

The Chairman referred last year to the expansion of the Company's interests in the Commonwealth. The letterpress and illustrations which accompany the Accounts this year give some indication of the extent, both geographical and functional of these interests. This year's new look, which has attracted favourable comment, is only the first step in a process, which we hope to develop further in the future, of making more information available about the Company's activities.

The Directors' Report and the Review of Operations contain some information in explanation and amplification of the Accounts and there are only one or two items to which I need draw your special attention.

MAIN SOURCE OF INCOME

Our investments in base metals, which comprise about 60% in value of the Company's assets, are our main source of income and are likely to remain so for the period during which our associated companies in Canada, Australia and Africa are developing their properties and carrying on their exploration programme.

As you are already aware, all exploration and development are now carried out by associated companies. Inevitably expenditure has to be incurred by these companies on exploration some of which turns out to be abortive, and in the early years of operation there is no corresponding profit against which this expenditure may be set off. Your Board have felt it wise, therefore, to make a reserve against shares in subsidiary companies and you will notice a figure of £250,000 under this heading in the Appropriation Account; this amount your Directors consider to be adequate to meet any loss of this nature of which they are at present aware.

Our relations with our Spanish associates continue to be most friendly and I am happy to be able to report that they have taken a small interest in some of the overseas activities of the Group. We welcome this evidence of their confidence in us.

DEVELOPMENT OF MARY KATHLEEN URANIUM MINE

In Australia work has now begun on the development of the Mary Kathleen uranium mine in North Queensland. This property is a close neighbour of the Mount Isa mine and is situated some 500 miles up country from the port of Townsville. In addition to the normal work of establishing the mine, communications will have to be improved and a complete township to house the workers on the spot will have to be built. We have established a happy relationship with the Commonwealth Government and we have received assurance of full support from the Queensland Government who own the railway between Townsville and the mine. We look forward to co-operating with them in developing this valuable mining property which is such an important item in the natural resources of their State.

CANADIAN MERGER COMPLETED

The merger of the Group's and Mr. J. H. Hirshhorn's Canadian mining interests has now been completed. As a result, The Rio Tinto Mining Company of Canada, in which we hold voting control and approximately 40% of the equity, has a varied portfolio of mining investments, including, besides considerable holdings in uranium, interests in gold and base metals and in mining exploration. The proper development of these interests will require careful planning, a task on which the Canadian company is now engaged, but the parent company cannot expect a return from these investments for some time.

URANIUM: ASSESSMENT OF COMMERCIAL POSITION

The Group now has investments in uranium amounting to about 15% by value of our total assets. The terms of Government contracts for the purchase of uranium oxide ensure, as a matter of policy, that producers' capital costs are amortized by the end of the contract period and provide in addition for a reasonable profit. The commercial position of uranium for the periods of the contracts—in most cases until 1962—is therefore covered. It may be useful, however, if I attempt, in the light of available information and to the extent permitted by the security regulations, a brief assessment of the commercial position which is likely to obtain after the expiry of the contracts.

The statistics in connection with the production and consumption of any metal are well known to be unreliable in the early stages of that metal's development. This is especially true in the case of uranium, where there are so many unknown factors involved. The estimates which I make are based on the best available figures; they are, I hope, on the conservative side.

POTENTIAL USAGE

Broadly speaking, uranium is an element which has only one useful property—its capacity for fission—and, until further uses for it are developed, the demand will depend almost entirely on the military requirement and on the expanding demand for additional power. At present the major part of the supplies used for warlike purposes is put through the American diffusion plants which separate uranium 235 from the natural mixture of uranium 235 and 238. The present demand might be assessed at between 10,000 and 15,000 tons of uranium metal a year. It seems likely that at this rate essential requirements for purely warlike purposes will have been satisfied before long, and in any case by the end of the contract period. Thereafter, there will undoubtedly be a continuing demand for this purpose, both for stock-piling existing atomic weapons and devices and for developing new ones; but it would obviously be quite impossible to guess at the extent of this demand, which must depend so largely on the state of international relations.

Most of the uranium needed for generating power will be used for the initial outfit for new power stations. The demand will, therefore, depend on the rate at which the use of electricity expands rather than on the existing level of consumption. There are many imponderables in calculating the future rate of this expansion, but it is relevant to note that the consumption of electricity has been increasing rapidly and fairly steadily for many years. In this country, for instance, annual consumption increased six to seven times between 1930 and 1955 and now stands at about 1,400 kilowatt hours per person; in the U.S.A. consumption rose from 85,000,000,000 to 389,000,000,000 kilowatt hours between 1925 and 1955 and now stands at about 2,400 kilowatt hours per person.

The facts which concern us more closely, however, are those concerned with the additional installations of generating capacity. In Britain 1,600 megawatts were installed in 1955 and this figure is expected to rise to 2,000 a year by 1960. In the United States about 10,000 megawatts of generating capacity is installed each year. In other parts of the world there is a continuing increase in the amount of capacity installed each

year, and there are, of course, countries in Asia and Africa which have large arrears to catch up. It is by no means certain that all new generating stations will be nuclear stations—whether they are nuclear, hydro-electric or thermal stations depends, amongst other factors, on relative costs—but without going into too many detailed calculations it would be reasonable to expect a rise in the construction of new nuclear power stations to a capacity of about 10,000 megawatts a year by 1975, and that this rate at least will continue for many years.

The amount of uranium required for the initial outfit of a new generating station is likely to fall over the twenty-year period to about 1 ton per megawatt, though at present the figure is much higher. On his estimation, therefore, the demand for uranium metal might rise over twenty years to some 10,000 tons a year for generating purposes.

The demand for uranium for replacement purposes is likely to be small, because the amount of fuel consumed annually by a reactor is infinitesimal. How far consumption in reactors is carried will depend to some extent on the cost of new uranium rods, but the total quantity required for replacement purposes will never be large. Moreover, there is no doubt that by the end of the twenty-year period breeder-reactors on the Dounreay pattern will be in operation, requiring no replacement fuel.

FUTURE POSSIBILITIES

Against these possible requirements for the future must be set the continued inventiveness of those engaged in research in nuclear fission for the production of power. The reduction in the initial outfit of uranium for a nuclear station by improved methods, the use of certain other metals in conjunction with uranium so as to economize its consumption, and new methods in construction or operation can all make substantial differences in quantities required. When we consider the advances made in the last twenty years, it would be bold to say with any certainty that a similar step forward will not be taken again in a similar period. There is always the possibility, too, that the fusion of light elements (the principle on which the so-called hydrogen bomb operates) will have been explored sufficiently to provide a source of power. Such a process would involve many problems in application—in particular those of insulation from heat and radiation—might turn out to be more expensive than nuclear fission and will certainly require a prolonged period of development. But if the difficulties can be solved, such a method which employs practically no uranium would present serious competition to nuclear fission, not least because it would produce no radio-active waste.

RESPONSIBILITY TO SHAREHOLDERS

For all these reasons any company venturing into the exploitation of uranium must assure itself as a first responsibility that the way is clear to benefit its shareholders. It is no doubt because of the special position of uranium in the respects to which I have referred that Governments are prepared to grant contracts which form an inducement to mining companies to work deposits, and your Directors have only ventured into uranium propositions where a contract has already been concluded—as in the case of Algom in Canada and Mary Kathleen in Australia—or where there is a reasonable prospect of it shortly being concluded, as in the case of some of the mines now controlled by The Rio Tinto Mining Company of Canada.

OBLIGATIONS TO FOSTERING PEACEFUL ADAPTATIONS

The announcements issued over last week-end by the U.S. Atomic Energy Commission and by the Canadian Trade Minister, Mr. C. D. Howe, give some pointers to the probable position which will obtain after these contracts expire. Forecasting is still hazardous but it would appear that there will be an expanding demand for uranium for generating purposes to replace the diminishing military demand. If the military demand should continue even at a lower level than at present, the requirement for uranium could be substantially in excess of present production. It is probable, however, that by that time Governments will have largely satisfied their *essential* requirements for uranium for purely warlike purposes, and it is certain that contracts for the purchase of uranium for peaceful purposes, such as that concluded with the Mary Kathleen Company, will become more numerous between now and 1962. These two factors may produce a situation in which uranium can be bought and sold through more normal commercial channels—as is indeed suggested by the U.S. Atomic Energy Commission's announcement—and in anticipation of this probability our subsidiary company, Rio Tinto Management Services, is actively considering the commercial organization which will then be necessary. If this time comes your Directors feel that they have a responsibility, as one of the leading mining groups in the world in the production of uranium, to ensure that all who need uranium for the production of power by nuclear methods or for other peaceful purposes can have access to supplies at prices which we hope to be able to make reasonable. The fact that, although British in domicile, the Company has a large number of foreign shareholders and mining interests spread over four continents underlines this responsibility.

TRIBUTE TO "FIRST-CLASS" EXECUTIVES AND STAFF

In the world-wide activities of the Group we are fortunate in being able to rely on the loyalty and hard work of a staff of first-class quality. It would be our wish to express our thanks to them individually, but I am sure they will realize that, if all were included, the list would be too long to read on this occasion. I hope that they will take this word of gratitude, anonymous and collective though it must perforce be, as a totally inadequate return for the enterprise and enthusiasm which they have brought to their work for the Rio Tinto Group of Companies.

The work of all those in the Group would go for nothing were it not for the inspired leadership of the Managing Director. To Mr. Duncan his colleagues would wish to express their congratulations on his achievement and their gratitude for his devotion to the affairs of the Company.

I must, with deep regret, record the great sadness with which we learnt of the deaths within a few weeks of each other of two of our officials in Spain—Mr. Frank Spettigue and Mr. Charles Julian. Mr. Spettigue was certainly marked out for high office had we continued to run the Spanish mine. His death at an early age has deprived this Company, and the world of mining, of one of its future leaders. Mr. Julian succeeded to the post of General Manager of the Spanish mines in 1951. In this capacity he ran the mines and presided over all the varied aspects of life in a British community overseas with great ability, winning the respect and affection of all who worked with him. On the change from British to Spanish control, he became a Director of the new company which now operates the mines, and our principal representative in Spain. He will be missed as a friend and as a wise counsellor by all who knew him in London, by all the staff who worked with him at the mines, and not least by his Spanish colleagues who early appreciated and admired his gifts and his personality.

Since the last meeting, Mr. David Colville and Mr. Hugh Saunders have been elected to the Board. We welcome them both and look forward to receiving their help and advice in the conduct of our affairs. Their elections will be before you for confirmation at this meeting.

The report and accounts were adopted and the dividend of 15%, free of tax, on the Ordinary Stock was approved.

The retiring directors, Mr. D. R. Colville, Mr. Hugh Saunders, O.B.E., T.D., Sir Eric Gore Browne, D.S.O., O.B.E., and Mr. A. T. Gough, O.B.E., M.C., were re-elected and the other formal business having been duly transacted, the proceedings terminated.

GENERAL MANAGER required for expanding property proposing to produce non-metallic minerals and refractories from open-cast workings in Southern Kenya. Position requires man of proved managerial capabilities, preferably engineering or mineral dressing background, with drive necessary to ensure rapid installation and start-up of additional treatment plant, including flotation, gravity concentration, calcination, etc.

Tour 2½ years with 4 months' leave plus 28 days local leave, salary not less than £175 per month. Free furnished quarters provided in pleasant area with good climate. Passages of employee and wife paid.

Please apply in writing, giving age, qualifications and experience to Box V 958, c/o Streets, 110 Old Broad Street, E.C.2.

WIGAN AND DISTRICT MINING AND TECHNICAL COLLEGE

Applications are invited for a post as LECTURER IN THE DEPARTMENT OF MINING AND GEOLOGY. Duties commence on September 1, 1956.

Candidates should possess a recognized qualification in Mining, Mine Surveying or Mechanical Engineering. Salary in accordance with the Burnham Technical Scale for Assistants Grade "B" (£525 x £25 - £820 plus additions for qualifications and experience).

Further particulars and application form will be sent by the undersigned. Last date for receipt of applications: Friday, June 15, 1956.

E. C. SMITH,
Principal.

May 29, 1956.

THE STRAITS TRADING CO. LTD.

ANNUAL GENERAL MEETING, MAY 16, 1956

CHAIRMAN'S ADDRESS

At the Annual General Meeting of The Straits Trading Co. Ltd. held in Singapore on May 16, 1956, the Chairman, **Sir Ewen Fergusson,** who presided, said :—

In my last address I remarked that if business activity throughout the world continued at the existing high level, I would expect 1955 to be a repetition of 1954 for the tin industry. That is what proved to be the case. The Malayan smelters received slightly more ore than they did in 1954 due to a small increase in output in the Federation of Malaya and better imports from Siam. The average Straits price in 1954 was $353.59 per picul and in 1955 about 3½% higher at $365.50 per picul so that overall it was another prosperous year for the tin mining industry in this part of the world.

SATISFACTORY DEMAND FOR TIN

Demand was at a satisfactory level throughout the year and there is ample evidence that consumption continued to increase. The most important use of tin is in the manufacture of tinplate and in consequence the fortunes of the mining industry are closely bound up with the demand for tinplate. The world demand has not been satisfied and now continuous strip mills are in course of erection or are planned and when they are in operation the result should not be other than beneficial to the mining industry.

If it is a reasonable assumption that the demand for tin will continue to increase in a more prosperous world the picture on the producing side is still one of depletion and a progressive reduction of the present excess of potential supply over actual demand.

In the circumstances of an excess supply all will agree that during recent years the maintenance of a satisfactory price has been mainly due to the policy of the U.S. Government. Its stock-piling of tin has absorbed the surplus and the latest Stockpile Report to the Congress covering the period July/December 1955 includes tin amongst 36 materials where the minimum objective is already in the Stockpile Inventory. There have been many estimates of the quantity of tin in the Stockpile but the information is of little significance unless there were any suggestion that the U.S. Government proposed to liquidate it. Even if the strategic needs become less pressing the accumulation should in the long run be of material benefit in a world where the potential supply might well fall below the growing requirements of the world. It has been stated that by June 30 tin will have moved from the category of minimum stockpile objective achieved to that of long-term objective fulfilled, but let us hope that the policy of strategic accumulation will continue until the Buffer Stock is ready to operate.

As is well known, part of the U.S. strategic concept was the need for a tin smelting industry in the U.S.A. and since 1942 the smelter at Texas City has been in operation. Its construction and operation increased the world's smelting capacity well beyond anything required in normal times, and its continued operation after the war meant that a Government-run and subsidized enterprise was in competition for ore supplies with the existing commercial smelters. On this account there has been criticism in which I have taken my part. Nevertheless one always felt that an operation which could not be justified in peace time on economic grounds could not last for ever and that the cessation of operations at Texas City was only a matter of time.

Whilst stockpiling and tin smelting were linked as strategic concepts, in fact stockpiling could have been accomplished and can be continued without a domestic tin smelting industry, and at a cheaper price. From the point of view of the commercial smelters it is therefore gratifying to know that the decision to close the Texas smelter has been finally made and that it will cease to operate in January 1957.

I have been able to read the report which was prepared in January this year for the President of the United States by the Office of Defence Mobilization on "The Feasibility of Maintaining a Permanent Domestic Tin-Smelting Industry". Remembering some of the harsh and hurtful utterances about the tin producing industry which were attributed to prominent Americans and given headline status in the local Press it was a refreshing document to read. As a sober and most able exposition of all the factors involved it reflects great credit on all those who were associated with its compilation.

With the decision taken on the Texas smelter and the approaching fulfilment of the long-term stockpile objective, the ratification and coming into force of the International Tin Agreement now become of pressing importance and the interim Committee of the International Tin Council held its fifth session in London on May 8. Formal ratification by Indonesia is required to make the scheme effective but as soon as that country's instrument of acceptance has been deposited which it is reported will be done this week it will be possible for the U.K. Government to convene the meeting at which the ratifying Governments will decide the date on which the Agreement shall become operative. It is expected that this action will not be long delayed and that by the time I next address you the scheme will be in operation.

In regard to tin production there is one factor which should not be overlooked, and that is the price level. The last two years have demonstrated that at current price levels there was enough production to satisfy the growing needs of the world and meet the special U.S. Stockpiling demand. At lower levels of price one can only conjecture what the effect would be on mine output, but it would not be unreasonable to expect that some marginal production would be affected in Malaya and elsewhere if the price were from 10% to 15% lower than at present.

I now turn to the Accounts. Earnings show an improvement on last year mainly due to the better dividends received from our investments and in the circumstances your Directors have felt able to recommend an increased distribution together with gifts of a special nature which will come up for approval in due course.

With regard to these gifts it may be remembered that this Company made a donation of $50,000.—to Raffles College at its inception. Raffles College is now part of the University of Malaya and it is felt that with the final settlement of our War Damage claims and the strong position of the Company a further donation would be appropriate. We feel sure that our recommendation will meet with your approval, since the importance of University education in Malaya to a local industrial concern such as this must be obvious to all.

Butterworth is a growing township and with the resumption of our activities there, and the large stake we have in its development, it is in our interests and of benefit to our workpeople to enlarge the educational facilities available.

THE BALANCE SHEET

In the Balance Sheet, Issued Capital and General and Investment Reserves remain unchanged though the latter will be augmented by the Appropriation now recommended.

War Damage Compensation reflects the further payments during the year. Two Appeals were necessary and it was not until February this year that the final awards were made. The final amount received was disappointing in view of the high standard at which we maintained our plant by constant renewals and the large sums we had to spend on reconstruction. With a total payment amounting to $5,950,000 this episode in the history of the Company closed—leaving us the poorer by a large sum of money but with a very modern Works at Butterworth to take the place of the older but still excellent plant we had there before the war.

Sundry Creditors and Credit Balances show little change over the previous year and the Bank overdraft is higher because of larger stocks of Tin and Tin ore at the considerably higher prices ruling in the last months of the year. The amount is speedily reduced with the resumption of smelting after the shutdown at the end of the year for stocktaking purposes.

On the Assets side the item Works, Land, Buildings and Furniture is safely valued. Butterworth has been in operation since the end of the year to a limited extent. We are satisfied that when it settles down it will fulfil the expectations for which it was designed.

Investments in Subsidiary Companies show little change though the total amount is affected by the elimination through re-payment of the amount due to Subsidiaries.

Sundry Investments are substantially higher because of the taking up of shares in tin mining companies.

Tin and Tin ore in Stock and in Transit has been already mentioned and continues to be safely and conservatively valued after allowing for smelting, treatment and other contingencies.

Fuel and Stores Stocks show a considerable increase mainly due to purchases of anthracite for Butterworth.

Sundry Debtors and Debit Balances show an increase but as with Cash in Hand calls for no special comment.

In regard to the Company's subsidiary interests the British Tin Smelting Company has been going through a difficult time

and losses have been incurred. The market in Copper with its high backwardation has presented unexpected difficulties and the problem is at present receiving attention.

The dredge at Karak is still paying its way; and the joint working arrangement with The Renong Tin Dredging Company Ltd. at Jinjang has continued to be remunerative. The Laboo Mill was completed in October last but the plant has not yet got into continuous production. This is a disappointment to all concerned in the development of the mine. Teething troubles were naturally to be expected but the quality of some of the material which is supplied nowadays is not up to prewar standard and replacements are slow in coming forward. I hope that by this time next year these initial faults and difficulties will have been overcome and the mine in successful operation.

As you are aware we have an area in Tanganyika which when operated by small fossicking methods gave indications of good potential value and encouraged us to go ahead with development. The investigation work which has been carried out has not produced anything which discloses outstanding tin values. Nevertheless there are some favourable indications though it cannot yet be said whether what has been disclosed will justify exploitation on a large scale. We hope shortly to reach a final decision on the future of this property.

PELAM ESTATE

Pelam Estate had an excellent year. Last year I said that we had planted to the limit of our area and thus had been unable to gain any benefit from the Government replanting scheme, to which we were, of course, forced to be substantial subscribers I am now happy to say that our disadvantage has been overcome and the Kedah Government has recently approved the alienation of about 2,000 acres adjoining the Estate on conditions which we should be able to fulfil. Whilst there are no signs whatsoever of deterioration in our producing areas, the large part of the Estate was planted in 1939 and 1940 and will presumably have to be renewed in the not-so-distant future. This addition to our land safeguards that future and will enable us always to have a substantial area of rubber in its prime, with new plantings regularly coming into bearing to take the place of the older and less remunerative.

THE POLITICAL OUTLOOK

This company is a Malayan Company. It introduced large-scale tin smelting in the 1880s, and since then has been closely associated with the development of the country in various commercial and industrial activities. It is substantially interested in the mining industry with whose fortunes it is so closely linked; it planted a large area of rubber at a time when cour age was needed to take the long view; it is an important partner in the plywood industry which is slowly surmounting the difficulties apparently inevitable in a new industry; and in other ways such as housing, office accommodation, shophouses and godowns for instance it has demonstrated its faith in the future of this territory.

In the last year there have been great strides towards self-government both in the Federation and in Singapore. Changes there must be and it would be too much to expect that these could take place without some disruption of the smooth running of the country or fears on the part of many both here and overseas about stability in the future.

Progress appears to have been at a more steady pace in the Federation but one advantage which was enjoyed there was that a large number of the members of the new Legislative Council had gained experience in previous Administrations, and also that it was possible for the elected Government to command a large majority in the Assembly.

In Singapore there was almost a clean sweep of the previous Council and after the election last year the Governor found himself faced with the task of forming a Government drawn from various sections who were prepared to form a coalition, a task which was finally accomplished by the nomination of two members chosen because of their political views.

With a somewhat uneasy majority and a burning desire to change the Rendel Constitution without delay it is not surprising that in Singapore progress has been more uneven than in the Federation and in consequence the feeling of stability in the future less pronounced.

If the general economic policies of the present elected Governments are implemented and are continued by succeeding Governments then I am sure they can expect the help and encouragement of all responsible persons in the steady march towards self-government.

But it cannot be gainsaid that there are disruptive elements in both territories. These elements thrive on pan-Asianism, narrow nationalism, labour unrest, colour animosity and will exploit anything to serve their own selfish ends; they could ruin Malaya.

The problem which this poses is whether the long view for Malaya is a continuance of the orderly progress to which we have been accustomed or whether the anarchy of the disruptive elements will prevail.

With this uncertainty which affects us all, to make a decision which commits one to the long term risk is much more difficult than it has ever been, and this difficulty must pervade the deliberations of all who are responsible for the management of any enterprise, large or small, and irrespective of the race of its management. Caution is unavoidable, and caution breeds hesitancy, and even if it does not cause a recession in trade it must inevitably hinder expansion.

Nevertheless it is my opinion that because of the inherent good sense and soundness of the large bulk of the population, the people of Malaya can be expected to choose their representatives from those who will be proud of this country and who will do nothing to jeopardize the basis of racial harmony, the rule of law and order, the stability of the currency and the many institutions which enable the modern state to function in happiness and prosperity for the benefit of all.

That being so our faith in the future of both the Federation and Singapore continues.

TRIBUTE TO STAFF

My closing reference is to the Staff of the Company and its associates—and it gives me great pleasure to pay a tribute to their continued keenness and the hard work they have put in during the year. I am sure you would wish this well-earned tribute to be recorded.

The Report and Accounts were adopted.

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THE CONSOLIDATED ZINC CORPORATION

RECORD OUTPUT AND IMPROVED EFFICIENCY

MR. JOHN R. GOVETT'S REVIEW

The seventh annual general meeting of The Consolidated Zinc Corporation Limited will be held on June 18 at 37 Dover Street, London, W.

The following is an extract from the statement by the Chairman, **Mr. John R. Govett,** which has been circulated with the report and accounts for the year ended December 31, 1955.

The story of the year 1955 is one of record output and improved efficiencies of the mine, satisfactory progress by the smelting and other activities, higher realized prices for lead and zinc, and a greater investment income, but a net profit showing little change due to the burden of higher mining royalty and taxation.

A final dividend is proposed of 3s. per share, giving a total of 4s. 6d. per share compared with 3s. 9d. for 1954.

In the United Kingdom, Imperial Smelting Corporation has continued its development of the Imperial Smelting Process with particular emphasis on the smelting of zinc in association with lead and other metals. The progress has been encouraging and considerable interest is being shown by a number of mining and smelting interests overseas.

The Corporation's production of virgin zinc metal from primary ores was maintained in 1955 very close to the all-time record achieved during the previous year.

Production of Mazak zinc alloy increased and was considerably about the 1947 figure, hitherto the peak for the output of this metal in peace-time.

The output of sulphuric acid was slightly lower than the record production made in 1954.

The production of standard lithopone pigment increased only modestly, but there was a significant increase in 60 per cent. lithopone and zinc sulphide.

The Corporation's mining activities within the United Kingdom continued satisfactorily.

Production of chlorofluorocarbon chemicals continues under the registered trade name of " Isceon ".

In Australia the year 1955 marked the completion of fifty years of productive life by the Zinc Corporation and in this Anniversary year the Company achieved a record production of 645,959 tons.

In 1955, 652,726 tons of ore were milled compared with 593,209 tons in 1954. Lead concentrates produced in 1955 amounted to 113,126 tons containing 83,479 tons of recoverable lead and 1,832,893 ounces of silver and zinc concentrate production was 116,645 tons assaying 52.6 per cent zinc.

Modification to the flotation machines made possible the very satisfactory increase in treatment rate from 137 tons to 158 tons per hour with a substantial saving in power and the maintenance of a high standard of metallurgical efficiency.

The ore reserves outlined and developed ready for stoping or in process of being stoped have been fully maintained by development work during the year. At December 31, 1955, the reserves amounted to 5,800,000 tons assaying 14.3 per cent lead, 2.8 ounces silver and 11.6 per cent zinc compared with 5,800,000 tons assaying 14.6 per cent lead, 2.8 ounces silver and 11.3 per cent zinc at December 31, 1954.

A programme of horizontal diamond drilling is in progress to outline the siliceous and rhodonitic zinc lodes between the Nos. 7 and 14 Levels, and detailed studies are being made to evaluate the large tonnage of low-grade ore in these lodes under different mining methods and degrees of ore extraction. As part of this programme, an experimental shrinkage stope is now operating in low-grade ore between Nos. 5 and 6 Levels.

NEW BROKEN HILL CONSOLIDATED

A MOST SATISFACTORY YEAR'S WORKING

MR. JOHN R. GOVETT ON OPERATIONAL INDEPENDENCE

The twentieth annual general meeting of New Broken Hill Consolidated Limited will be held on June 18 at 37 Dover Street, London, W.

The following is an extract from the statement by the Chairman, **Mr. John R. Govett,** which has been circulated with the report and accounts for the year ended December 31, 1955 :—

The Company has had a most satisfactory year with a profit of £1,850,449 (£1,141,234 in 1954) after charging depreciation £330,000 and after providing mining royalty £186,328, but before providing taxation. This improvement is due partly to the increased production and realizations during the year and partly to the higher prices for lead and zinc. Taxation absorbs £903,386 leaving a net profit of £947,063 (£597,274).

A final dividend of 2/6 per share is recommended making a total distribution for the year of 4/6 per share compared with 3/0 per share for 1954.

Ore mined in 1955 amounted to 531,447 tons (lead averaging 8.9% silver, silver 2.0 ozs. and zinc 13.8%) as compared with a total for 1954 of 482,058 tons (lead 9.4%, silver 2.1 ozs. and zinc 14.4%).

The tonnage of ore milled in 1955 was 530,044 compared with 483,461 in 1954. 58,254 tons of lead concentrates were produced assaying 76.5% lead and 14.6 ozs. silver, while 133,695 tons of zinc concentrates were produced assaying 51.3% zinc

CONCLUSION

For some time after we embarked in 1945 on the long range programme for the development of the Mine, our operations, as shareholders are aware, have depended to a very large extent on access to our workings through the Zinc Corporation Mine, and also on the facilities afforded by that Company's Mill. Since the completion of the haulage shaft in 1951 we have been gradually approaching the stage of independence finally achieved at the beginning of this year, since when our operations have been serviced through our own shafts and the whole of our production treated in our own Mill. However, as a result of the policy of avoiding any unnecessary duplication of surface facilities we shall continue to be jointly interested with the Zinc Corporation in the provision of certain essential and valuable services. For instance, while we have workshops adjacent to the shafts for routine maintenance on underground equipment, and a transit store, we have not attempted to duplicate the extensive workshops and stores facilities established on the Zinc Corporation Mine which have been and are available to us with advantage to both Companies. Also, at present, and for some time to come, residues for hydraulic filling in the Mine will continue to be drawn from a central residue treatment plant on the Zinc Corporation lease and through the same sand pass system that serves the Zinc Corporation Mine. Although this Company has paid and will of course continue to pay to the Zinc Corporation proper charges for the use of these facilities and services, it is, I feel, appropriate at this stage of our development that we should acknowledge the considerable benefit derived from our association with the Zinc Corporation; as a result of this we have been able not only to avoid capital outlay, but also to achieve our original programme in a shorter time than would have been otherwise possible.

THE QUEEN'S BIRTHDAY HONOURS

Many names, well-known to the mining and metal industries, appear in the Queen's Birthday Honours List, published this week. Among the new Knights Batchelor are Mr. Horace W. Clarke, chairman of the Aluminium Industry Council; Mr. George H. Dowty, chairman of the Dowty Group and its subsidiaries; Mr. Horace S. Gibson, managing director of Iraq Petroleum and its associated companies; Commander (S) Robert Gillman Allen Jackson, chairman, Preparatory Commission, Volta River Project, Gold Coast; Mr. Ronald Lindsay Prain, chairman and president of the Rhodesian Selection Trust and Roan Antelope Copper Mines, chairman and director of a large number of mining and other companise for public services in Northern Rhodeisa; and Professor William John Pugh, director of the Geological Survey of Great Britain and Museum of Practical Geology, Department of Scientific and Industrial Research.

Mr. Charles Hubert Sebastian de Peyer, Under-Secretary, Minister of Fuel and Power and Minister to the High Authority of the European Coal and Steel Community, was awarded the C.M.G. The K.B.E. was conferred on Sir Edwin Savory Herbert, chairman of Ultramar. Among those receiving the C.B.E. were Mr. D. M. Rees, chairman, South-Western Division, National Coal Board, and Mr. A. B. Watts, director, British Ropes (Southern Sales). Recipients of the O.B.E. included Mr. A. H. Laye, manager (purchasing), British Insulated Callender's Cables. The M.B.E. was awarded to Mr. D. R. E. O'Neill, technical sales manager of the London Aluminium Company.

KILLINGHALL TIN, LTD.

MR. ADDINSELL'S STATEMENT

The 26th annual general meeting of Killinghall Tin, Ltd., was held on May 25 in London, **Mr. Jack Addinsell,** the chairman, presiding.

The following is his circulated statement for the year to September 30, 1955 :—

I am sure that Stockholders will have been pleased to see in the New Year's Honours List that Mr. A. G. Glenister was made a Commander of the Order of the British Empire; this honour was conferred upon him for the services he gave to the tin industry. It will be remembered that Mr. Glenister was Chairman of the Malayan Chamber of Mines for over ten years, during which he worked tirelessly to further the interests of our industry.

The variable nature of the ground through which the dredge is working, to which I drew attention last year, was emphasized by the results obtained during the year under review. After 233 tons had been produced in the first six months, the third and final quarter's outputs were 63¼ tons and 84½ tons respectively, the total for the year being 381 tons of tin ore. It is noteworthy that the highest individual month's output was over 95 tons, and the lowest only 12 tons.

PROFIT AND DIVIDEND

The profit for the year, after the usual charges and bringing in interest and sundry receipts, was £29,077. There was a further small credit of £3,044 in respect of taxation provision no longer required, and, with the balance from the previous year, £29,492, there is a total of £61,613 for disposal.

The experimental operations with the grab dredge were, as the General Managers report, discontinued at the close of the financial year when it was envisaged that no further useful information was likely to be obtained from the plant. The Syndicate will in due course dispose of the machinery to its best advantage, but in the meantime the Board have thought it prudent to write-off £12,150 from the total contributions made by the Company to the Syndicate.

Your Directors recommend a dividend of 20 per cent., requiring £17,250 net, and after making provision for £6,000 taxation (this year restricted to the distribution charge in respect of the dividend), and £12,150 written off the Grab Dredger Syndicate contributions, there remains £26,213 to carry forward to the current financial year.

You will note from the General Managers' Report that the bucket band was renewed in February, and this is reflected in the figure shown in the Balance Sheet for Bucket Renewals at £8,123 against £47,578 last year.

ALTERATIONS TO DREDGE

In my last statement I reported that we were investigating methods of recovering the payable values of tin ore lying below the present maximum digging depth of the dredge, disclosed by test bores. To this end some structural alterations to the dredge are in progress, in preparation for lowering the water level of the paddock for experimental deeper digging.

During the current financial year, as the General Managers anticipated in their report, ground containing lower average values is being treated, and for six months of the year the output has been 155¼ tons.

Stockholders will again wish me to thank our General Managers, Messrs. Osborne and Chappel, the Resident Manager and the Staff at the Mine, for their efforts on our behalf.

The report and accounts were adopted.

QUARRY MANAGER required for service in West Africa to work up and control quarries to produce 30,000 tons hard rock per week. Really top rate salary payable to competent, active man. Experience in use of blast hole machines such as Quarrymasters, Drillmasters and use of large compressed air installation and air tools essential. Administrative control over entire quarry system including large face shovels of 5 cu. yd. capacity and loading to rail system, with 25 Europeans and 1,000 local employees. Aged 35 to 55. Not necessarily qualified other than by experience. Mining, mechanical, civil or quarry engineering background considered. 15 month tours with 3 months' paid leave. First class travel. Preferably travel single but married accommodation might be found 18 miles from site. PARKINSON HOWARD LIMITED, Abbey House, 2-8 Victoria Street, London, S.W.1.

Focus on Australia

Two booklets have been prepared by the Australia and New Zealand Bank as guides for concerns contemplating a subsidiary Company in Australia. They are *Australia's Continuing Development* which describes social, industrial and commercial conditions; and *Company Formation in Australia* which outlines company law and current taxation. Copies of both booklets will be gladly supplied on request.

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GOLD FIELDS AUSTRALIAN DEVELOPMENT

CAPITAL REPAYMENT APPROVED

The 23rd Annual General Meeting of Gold Fields Australian Development Co., Ltd., was held on May 24 at Winchester House, Old Broad Street, London, E.C.

Mr. R. H. A. Neuschild, the chairman, in the course of his speech said: At £54,870 the profit for the year to December 31, 1955, discloses a satisfactory increase over the figure of £36,493 for the previous year. This resulted from the increase in mill capacity, so that 33,676 tons were treated compared with 27,214 tons in the previous year.

The general upward trend in costs prevented the full benefit of the increased throughput being obtained, but the overall reduction of 2/6d. per ton milled is not unsatisfactory. The net group profit for 1955 was £35,636 and virtually extinguished the group loss brought forward from 1954, which has been eliminated since the turn of the year.

Operations are now confined to mining and milling the ore reserve which, at December 31, 1955, was estimated at 100,000 tons averaging 9.14 dwt. gold per ton. On the basis of treating some 33,000 tons per annum the mine had some three years of operations ahead of it.

Some surprise has been occassioned by the fact that we are in a position to return 2s. per share, but the group cash position has been improving faster than indicated by the profit earned.

Subject to the passing of the relative resolution application will be made without delay to obtain the sanction of the High Court to the reduction of capital and on this being received, probably within the next two months, we shall make the repayment of 2s. per share without delay.

Our present intention would be that future returns to you would also reach you by way of the return of capital and, if you will accept it merely as an estimate, I am prepared to express the hope that we may, in due course, be able to return possibly a further like sum, but that will take a few years.

The Report and Accounts were adopted and, at a subsequent Extraordinary General Meeting, resolutions relating to the reduction of capital were approved.

SOUTH CROFTY, LTD.

The 50th annual general meeting of South Crofty, Ltd., was held on May 23, 1956, at Winchester House, London, E.C.2.

Mr. T. Pryor, D.S.O., M.I.M.M., Chairman, presided.

The following is an extract from his Statement circulated with the Report and Accounts for the year ended December 31, 1955:—

The year was a noteworthy one for this Company. In the first place, the new electric pumps came into commission in May and therefore, for the first time in the long history of the Mine, there was an adequate reserve of pump capacity to cope with water underground. Secondly, as from July, an important agreement was entered into whereby the smelters of our ore and our principal mineral landlords made available up to £100,000 for capital works to put the Company in a position to increase its annual output of tin. Thirdly, the Company once more was placed on a dividend-earning basis.

From the Profit and Loss Account it will be seen that after paying all costs and writing off £12,566 for depreciation and after receiving a dividend of £5,250 (gross) from our Subsidiary Company which works the Castle-an-Dinas Wolfram Mine, the working profit for 1955 was £37,736.

It has therefore been possible to wipe out the debit balance of £27,189 brought forward from the year previous, and to propose a dividend of 7 per cent. which will leave £2,697 to be carried forward.

Notwithstanding two increases in wages during the year and continued rises in the cost of power and all materials, the gross working expenditure was lower than in 1954. The cost per ton crushed has been reduced by 11s. 6d. to 94s. 2d. per ton. This is due to the larger tonnage crushed and to lower pumping costs in the latter half of the year. The reduction in working costs would have been even greater had it not been that during the year £6,125 more was spent on repairs and renewals of plant than in the year previous. For the past twenty years or more the Mine has been working from hand-to-mouth with its plant and equipment. Now that at last the property is free from the constant menace of being suddenly flooded, there are a number of urgently needed repairs and replacements which will keep working costs in 1956 higher than they otherwise would be.

The report and accounts were adopted.

BRITISH ROPES

ANOTHER SUCCESSFUL YEAR

The 34th annual general meeting of British Ropes Ltd. was held on May 30 in London.

Mr. Herbert Smith (the chairman) in the course of his speech, said:—I am pleased to report another successful year of trading for your company in terms of both production and profit. The Group profits at £2,321,000, when compared with £1,904,000 for the previous year largely reflect increased turnover.

A final dividend of 12% on the Ordinary Stock, making 16% for the year on the Ordinary Stock, has been recommended.

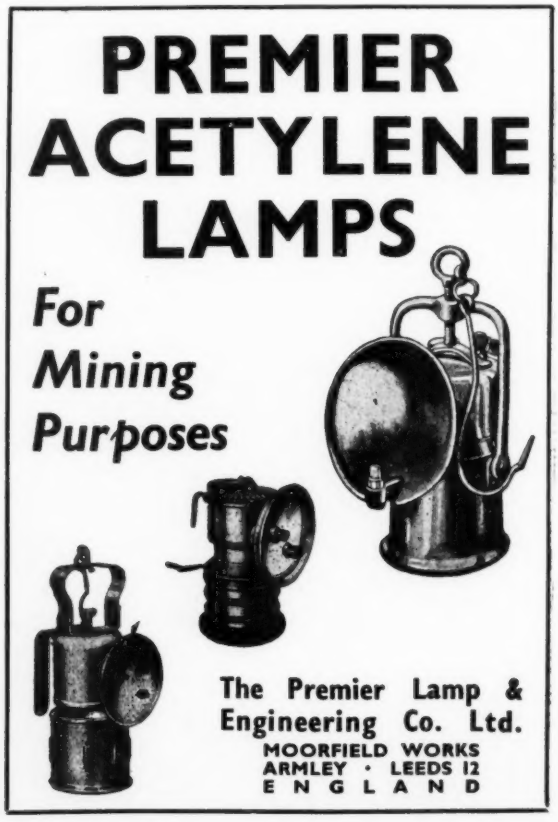
We can divide the company's activities into three main Sections, Wire, Wire Rope and Hemp. All three Sections increased their sales both in tonnage and value as compared with the previous year. The supply of steel Rods has not been sufficient to meet our needs and has limited our activities. We anticipate some increase in supplies during the present year.

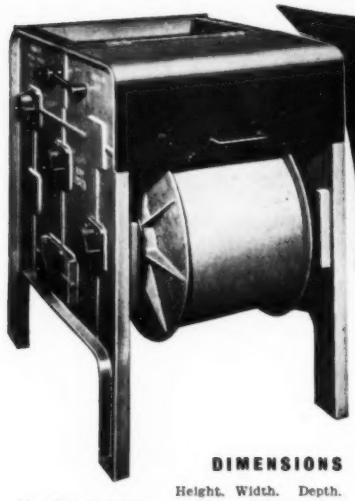
The demand for wire rope in the Home market increased during the year and your company has maintained its share of this increased demand. The Export trade in wire rope continued extremely competitive although the demand increased considerably. The modern equipment and plant installed has placed your company in an excellent position to supply the export market with the high quality steel wire ropes associated with your company's world-wide reputation. There was an appreciable expansion in the company's total exports last year as compared with 1954, and total exports in all three sections exceeded £2,000,000.

We continue to hold our reasonable share of the Hard Fibre trade, and it is our constant endeavour to maintain our lead in the development of cordage made from synthetics.

I do not propose to make any prophecy as regards the trading prospects in 1956. The maintenance of profit margins in the face of unavoidably increased costs will not be easy, but we have the benefit of our increased productive efficiency to help us. There is no reason for pessimism provided that the economic health of the country is satisfactory.

The report and accounts were adopted.





for the extraction of iron impurities from non-ferrous swarf, minerals, residues, etc.

DIMENSIONS

	Height.	Width.	Depth.
Overall Dimensions:	37"	31"	34"
Drum Dimensions:	12" dia.		14" face.
Nett weight:			960 lbs.
Boxed:	1100 lbs.		37 cu. ft.
H.P. Drive: ½.			
Total Input:			600 watts.

Distance flange of drum to ground: 12½".

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